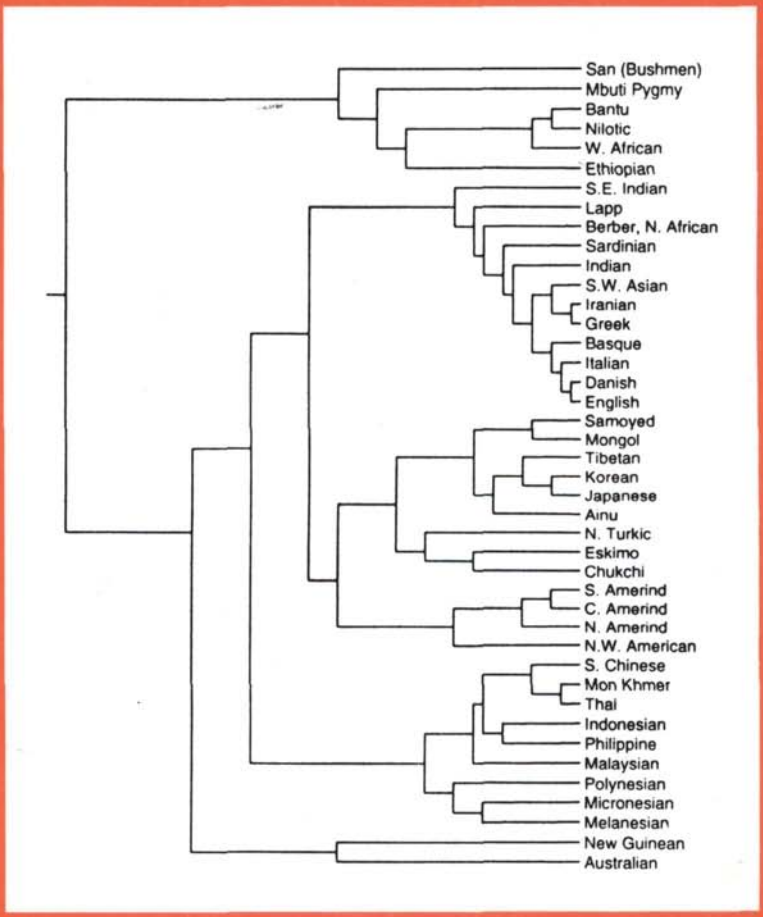
THE MANKIND QUARTERLY



VOL. XXXV, Nos. 1 & 2 Fall/Winter 1994

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Leading the field in sociology and the related social sciences:

sociological abstracts (sa)

and

Social Planning/Policy & Development Abstracts (SOPODA)

Our subject specialists track the broad spectrum of theoretical and applied sociology from the more than 1,800 discipline-specific and related journals published in North America, Europe, Asia, Africa, Australia, and South America.

sa and **SOPODA** each offer you in-depth abstracts and precise indexing of timely journal articles and books, enhanced dissertation listings, and a bibliography of book reviews from the journals screened.

sa and **SOPODA** are available *together on the* ***sociofile*** CD-ROM and are hosted online by BRS, DATA-STAR, DIALOG, and DIMDI. Hardcopy subscriptions can be ordered from the address below.

The **sa** and **SOPODA** information products are supported by:

- Database-specific user manuals
- The latest journal coverage list
- The **sociofile** Quick Reference Guide and User's Handbook
- The **Thesaurus of Sociological Indexing Terms**
- Your Guide to Searching **sa** using a Personal Computer
- A professional workshop program

The **sa** family of databases — your fast track to the information you need, in the format you want.

sociological abstracts, inc.

p.o. box 22206 • san diego, ca 92192-0206
phone (619) 695-8803/FAX (619) 695-0416/Help Desk (800) 752-3945

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Vol. XXXV, Nos. 1 & 2 Fall/Winter 1994

THE MANKIND QUARTERLY

EDITORIAL COMMITTEE

PETER BOEV (Sofia, Bulgaria)
BRUNETTO CHIARELLI (Florence, Italy)
HANS W. JÜRGENS (Kiel, Germany)
RICHARD LYNN (Coleraine, Northern Ireland)
EDGAR C. POLOMÉ (Austin, Texas)

EDITORIAL ADVISORY BOARD

Raymond B. Cattell, Honolulu, Hawaii; Tadeusz Dzierżykray-Rogalski, Warsaw, Poland; J. Balslev Jorgensen, Copenhagen, Denmark; David de Laubenfels, Syracuse, New York; Jacques Macquet, Los Angeles, California; T.L. Markey, Ann Arbor, Michigan; Umberto Melotti, Pavia, Italy; Clyde E. Noble, Athens, Georgia; Jens Palsson, Reykjavik, Iceland; Ralph M. Rowlett, Columbia, Missouri; R.J. Rummel, Manoa, Hawaii; Noel W. Smith, State University of New York at Plattsburg; Frederick J. Streng, Dallas, Texas; Charles C. Susanne, Brussels, Belgium; Daniel R. Vining, Philadelphia, Pennsylvania; Volkmar Weiss, Leipzig, Germany.

FOUNDER AND FORMER EDITOR-IN-CHIEF
Robert Gayre of Gayre (Edinburgh, Scotland)

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Vol. XXXV, Nos. 1 & 2 Fall/Winter 1994

CONTENTS

The Culture Pressure Factor and the Culturo-Genetic Lag
By Raymond B. Cattell 3
The NOW Society: **The Psychological Impact of the Communist Economic System**
By Harold Nordin 11
Genetic and Environmental Influences on Morphological Characteristics
By M. Nikolova 27
The Germanic Earth Goddess in *Beowulf?*
By Frank Battaglia 39
Tracing the Genetic History of Modern Man
By Edward M. Miller 71
Evolution and Differences in Human Behavioral Patterns
By Jared Taylor 109
The Consequences of Variable Intelligence
By Tatu Vanhanen 123
Race Differences in the Annals of Science
By Kevin Lamb 139
Surveying Multi-Ethnicity
By Daniel R. Vining 151

Cover Picture: Average linkage tree for 42 populations based on F_{ST} genetic distances (Courtesy of Princeton University Press). See book review article by Edward M. Miller of *The History and Geography of Human Genes*, L. C. Cavelli-Sforza, P. Menozzi and A. Piazzi, Princeton University Press)

The Mankind Quarterly **is published by The Institute for the Study of Man, 1133 13th St., N.W., Suite C-2. Washington D.C., 20005 [Tel: (202) 371-2700 – Fax: (202) 371-1523]. The 1994 price of subscriptions is $20.00 per annum for students, $32.50 for private individuals, and $75 per annum for libraries, institutions and other corporate bodies. Special reduced three-year subscription rates are available at a cost of $90 to individuals (12 issues) and $210 for libraries and other corporate bodies (12 issues). MasterCard & Visa accepted.**

Copyright 1994 by The Institute for the Study of Man ISSN 0025-2344

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Culture Pressure Factor and the Culturo-Genetic Lag

Raymond B. Cattell
Distinguished Professor Emeritus, University of Illinois

This article illustrates that advances in one area of science may be started by advances in another. It starts with a factor analysis which begins by finding the underlying determiners in nations of a vast array of relatively trivial and chaotic concretely measurable surface variables.

A first application to determine the broad traits of nations was made by correlating and factoring 78 social index scores across 116 nations for which social indices were obtainable. These studies revealed 19 independent dimensions. Most of them could be confirmed with common sense, such as Size, Affluence, Industrialization, Morality Level, etc, Scores on these factors yield natural profiles, and by applying the pattern similarity coefficient (and the Taxonome computer program) to them, similarities are perceived on typal groups. For example, there is an Old Mediterranean group, a modern African group, a South American neo-Mediterranean group, a Scandinavian type (Sweden, Denmark and Norway) and so forth.

It was soon noticeable that one factor among the nineteen just mentioned stood out as peculiar in its presented variables. They seemed weird, especially from a liberal viewpoint, as shown in Table 1. (The variables are arranged in declining order of saturation, correlative with the factor).

The startling thing about this dimension is the combination of pugnacity (riots, wars) with cultural level of productivity, urbanization and with signs of neurosis (suicide, stomach ulcers, divorce.) To a psychologist, particularly a Freudian, however, it is clear that it is dealing with a high level of frustration, followed first by aggression, and, when that is suppressed, by sublimation of energy into

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Table 1

Cultural Pressure (Early and Late)

Nobel prizes per 100,000 of the population
Expenditure on education
Degree of urbanization (cities over 20,000)
Large number of industrial strikes
Large number of riots
Many patents granted
High creativity in science and philosophy
High frequency of participation in war (1927-1939)
High ratio of divorces to marriages
High ratio of tertiary to primary occupations
Higher number of stomach ulcer cases
High suicide rate

acceptable, creative cultural channels. It is by comparison of earlier and later versions of that we get support for this interpretation.

The impeding of the expression of emotion, however, by advent of a general quality of inhibition, does not mean increasing dissatisfaction of ergs. (Incidentally, I use the term erg, which describes a definite simple structure pattern in dynamic interest variables, because "instinct" comes with trailing clouds of sheer assumption), The civilized man actually reaches a higher level of basic satisfaction of hunger, security. and even sex, than the savage whose life Hobbes described as "nasty, brutish and brief." The frustration in high cultural societies is due to the complexity of routes to satisfaction. This means postponement, departure from natural courses to the ergic goal, and complexity of action by which one is forced to reach ergic goals.

Incidentally, in forming the cultural pressure concept, nonfactorists perhaps need to be reminded that the "loading" is only, a partial correlation. Part of the variance on the variables will also be accounted for by other factors. For example, expenditure on education (Table 1) is also accounted for by the affluence factor. And reduced birth rate is loaded also on the Industrialization (Vigorous

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Development) factor. Joint causation must always be kept in mind in explaining individual variables.

The frustration caused by cultural complexity, in the cultural pressure factor, is so real that all of us complain of it. There are roughly three responses to it; (1) Sublimate into technological invention, This particularly appeared in the nineteenth century industrial revolution. Life was aided, but rendered more complexity the steam engine,the spread of compulsory education, and the linear steamship 2) By those who are straight conservatives and dig in their heels, and simply cling to the past. (3) By those who seek anesthetization to the incomprehensible, un bearable complication by taking to alcohol and drugs. (4) By a gifted minority who accept the complication and add to it by physical and social invention. (5) Neurotics and psychotics suffer maladjustment, shown especially in the growth of depression from long suppression of aggression. (6) The increase of general level of relatively pointless overactivity in life.

The general effect on the population of an increase in complexity has been vividly described at the journalistic level in Toffler's Future Shock. If we ask what genetic qualities in the population tend to make intolerance of culture pressure highest we can principally point to inadequate intelligence. For inadequate intelligence (defined as fluid intelligence) makes understanding of complexity more difficult, and adaptation to it more slow. In a recent study (Cattell, Cattell and Tomikawa, 1991) in which teachers designated the most overactive and troublesome children in class, the overactive turned out to be indubitably the least intelligent,though there were lesser indications of deficiency in ego strength factor C) and higher values on factor D (presumably the factor in attention deficit syndrome, ADS).

The child of I.Q, around 80 who has to sit hour after hour in incomprehensible classes of, for example, algebra and writing,is bound to fidget and be over-active in useless ways. The same over-activity, though not available in our social indices, is probably characteristic of the adult population of our time. The cultural pressure measures are proportional to the differences between the level of cultural advance and the genetic capacity to handle it, which is largely a

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

function of the innate intelligence level.[1] The gap between these, in any culture, we describe as the culturo-genetic gap. The gap increases through rapid advances in the culture, or alternatively through dysgenic, backward movement in the genetic makeup. We do not know enough yet about the fitness features of the genetic makeup,

We do not know enough about the fitness features of the genetic makeup – other than the large role of intelligence, which is 80% hereditary. Nor do we know definitely, in the present generation, whether the culturo-genetic gap is actually increasing or decreasing. But most observers believe the former, and they point to such things as the decline in academic standards, (the ETS exams), the increase in violent crime, the prevalence of obstinate escape into drugs, and the sense of malaise in government. It is another peculiar character of the cultural pressure growth curve that in the three countries examined longitudinally (Cattell, 1994), it rises in an almost linear fashion with time, over the nineteenth and twentieth century, though our data, as Diagram 1 shows, ends at World War II. There is a slight quiver of the plot when the war stress factor goes very high in Britain in World War I, and in the U.S.A. in World War II. But we can only suppose that it is still ascending. (These longitudinal studies used P-technique which is used to score an estimate rate from variables at every year.) Historians (Toynbee, Norling, Rowse, Gibbon) have thought they saw another feature in the period of late decline of the Roman Empire, besides such things as a dysgenic effect, malaria, etc. They think they see a decline in sheer vitality, evidenced by lack of faith in the culture, depression of effort, pursuit of superficial pleasures,.and loss of group feeling, we do not have evidence of such-variables in the provided list of social indices, but it is at least possible that we are indeed beginning to pass through the later stages of growth of the Cultural Pressure factor. The basic proposition of the culturo-genetic lag is that the cultural pressure score is

[1] One must note that temporal changes in the loadings on the factor may be due also to changes in the proportion of different intelligence levels in the population. The effect on cultural productivity (in the narrower sense) is undoubtedly due to the highest intelligence fraction, while that on violence is due to the dysgenic bulge in the intelligence distribution in the I.Q. 80 to 95 range.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

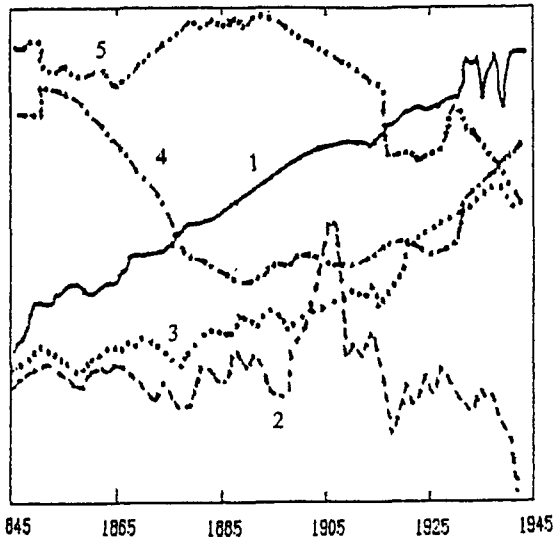


DIAGRAM 1A. Course of time change factors in the U.S.A. Factor 1, Cultural Pressure; Factor 2, Hard times vs. Expansive ease; Factor 3, Emancipated urbanism vs. Rural rigor; Factor 5, Primitive development vs. Self-sufficiency.

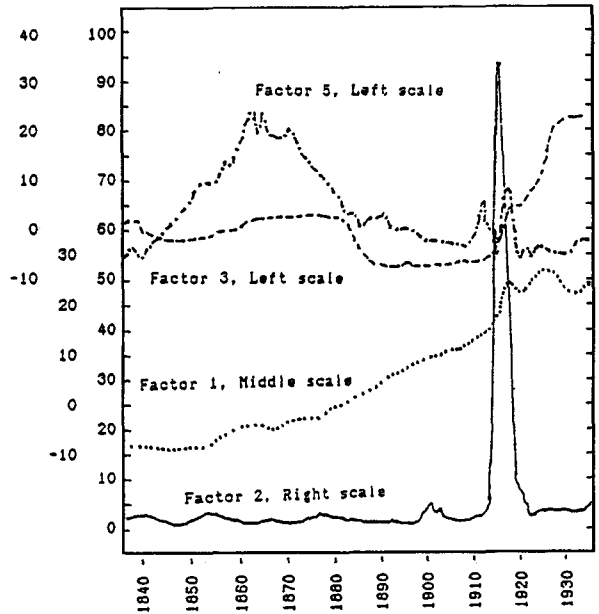


DIAGRAM 1B Course of time change factors in the U.K. Factor 1, Cultural Pressure; Factor 2, War stress vs. Ease of living; Factor 3, Emancipation vs. Rigor; Factor 4. Enlightenment; Factor 5, Slum standards vs. Cultural integration.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

proportional to the lag of genetic fitness behind the progress of the usually ascending culture pattern complexity. The culture pattern is the judge of fitness and survival of the population. The genetic nature of the population improves slowly, by the selection upon mutations which is provided by the culture, It is one instance of the unusual phenomenon of directed evolution, in which a steady movement normally exists among compatible mutations. In long term perspective the possibility exists that each culture carries genetic evolution forward, but that each culture fails at a certain point, leaving genetic evaluation to be carried on by births of a completely new culture.

To understand what goes on we need far more factor analytic research and a technical means of defining and measuring (1) Cultural complexity, (2) Cultural pressure and (3) Genetic status. We have a tolerable basis for measuring (2), cultural pressure, and a partial measure of (3), genetic standing, in intelligence tests (Cattell, 1987 b), but (1) still requires closer inspection and analysis. As a present hunch we might look to measure complexity by. (1) the number of social institutions (family, schools, banks, military), (2) the number of decisions the average person has to take per day, (3) a measure of the postponements of satisfaction of ergs that one has to practice, e.g., eating only at special times and with special regulations, (4) the amount of p-culture activity in the culture.

Elsewhere (Cattell, 1987), I have distinguished r-culture activities which are directly concerned with controlling the environment realistically, and p-culture satisfaction of emotions (ergs) with no practical objective other than the discharge of blocked ergs.

Examples of p-culture are the theater, romantic make-believe literature, sport, art, most recreations, escape from the culture burden ("get away"), and the superstitions, animistic rituals of religions. Some forms of recreation may be partly r-culture in that they improve capacity to deal with productive r-culture activities. R-culture is exemplified by science, technology, business management, invention, production, and whatever contributes to handling the ergic satisfactions of hunger and security-seeking mankind.

It is evident that social psychology has three main values to determine in deciding our fate: (1) A value for the complexity

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Table 2

Number of Nobel prizes per 100,000 people
Magnitude of expenditure on education
Percent of people under treatment for neurosis
Number of depressives under treatment
Number of violent crimes per 100,000
Percent of population in cities over 20,000
Ratio of visiting students to native students
Number of industrial strikes that become riots
High ratio of tertiary to primary occupations
High suicide rate
High score of population on factors O, F, C and Q^3 in the 16 PF totality
Population score on fluid general intelligence
More patients recorded per 100,000
Extent of perversions, notably homosexuality
Presence of superstitions in religions
Time given in the press to trivial issues
Ratio of activity in art to activity in science

level of the culture, (2) A measure of the level of genetic development in the population, (3) A measure of the discrepancy of (1) and (2) which is available in the culture pressure factor. The latter reflects the size of the culturo-genetic gap.

The size of (2) can be reasonably inferred from the population's intelligence level, though, as we have agreed, other personality factors will aid this genetic determination, notably C, Ego strength, G factor, and M, which contribute to adaptation. Current writers may also be right in supposing that the attention deficit syndrome (ADR in Horn's second order abilities) may also be responsible for difficulties in tolerating complexity.

Regarding (3), the experienced degree of cultural pressure level, we can immediately proceed to determine its form and level with increased accuracy. It requires that all other factors be taken out with it, as in the research on which we now lean. But an enriched array of socio-psychological variables needs to be included in the hope of improved definition and measurement. Table 2 is a set we would

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

offer to an investigation.

Whatever emerges from Table 2 as the factorially more accurate form of the cultural pressure factor over 120 nations and perhaps 80 variables, will determine the next step.

We need also to determine whether the positive feedback from the r-culture pressure variables causes the factor to rise with an upward acceleration over present times.

The obvious equation is:

Complexity minus Genetic Level = Cultural Pressure

This means that the third term can always be calculated from the other two, though as yet we do not, operationally, have data on two. But the very conception of the relationship is a step forward in our understanding of the future of progress in our culture.

References

Cattell, R. B.
1987 Beyondism. New York, Praeger

Cattell, R. B.
1987 Intelligence, its Structure, Growth and Action. New York, Elsevier Science Publishers

Cattell, R. B.
1994 How Good is Your Country? Washington, D.C.: The Institute for the Study of Man

Cattell, R. B., H. B. Cattell and S. A. Tomikawa
1985 Enquiry into a Personality Test for Overactive Children. *Multivariate Experimental Clinical Psychology*, 7: 103-111

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The NOW Society: The Psychological Impact of the Communist Economic System

Harold Nordin
Eastern Illinois University

Many articles and books have recently sought to describe and the failure of communism in the Soviet Union and former Bloc countries. They have recognized the impact of the unwillingness of the leaders in each country to allow freedom and, with it, risk-taking, in either the political or economic spheres. Fear of political and social ramifications on the part of decision-makers prevented the correction and publication of crimes being committed even as they were recognized. This fear eventually permeated each system to the extent that it immobilized efforts aimed at reform and so brought about the collapse of communism. However, few studies has commented on the psychological impact of the Communist system which destroyed the spirit of adventure among the bulk of the citizenry under its control.

Though it professes to be concerned with and work for the success of the system in the future, communist and other socialist systems direct the individual's attention to the present. Communism, especially, represents an essentially "Now"-oriented system. Long-range planning of five-to-twenty years in Communist countries was the officially-espoused method of guaranteeing success for a later time period. However, so far as the public was concerned the "present" (operating on a daily, weekly, monthly and yearly period) became the only time period of importance. Populations living under Communist economic systems tended to become accustomed to facing life on a day-to-day basis – to living in the present rather than learning from the past and making plans for the future.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Entrepreneur

Man is inherently a risk avoider; most people take the path of least resistance. There are few risk takers, and when they are successful in a capitalist system they are rewarded immensely. Yet there is always the possibility of unsuccessful risk taking and, ultimately, failure – in the loss of income, wealth, status, and power. A risk taker, in a sense, predicts the future and is willing to absorb the losses if wrong, but that person also reaps the benefits for being right. The entrepreneur looks to tomorrow and is little concerned about today. He has a vision.

In a communist system, however, risk is to be avoided. There are all the penalties of failure[1] but none or few rewards of success. As a consequence, the emphasis is placed on the present. Live for today; don't worry about tomorrow, for the system (government) will take care of almost everything.

The Savings Function

Economists deal with what is described as the savings function: i.e., reasons for saving a part of one's income.[2] The motives people have to save are many facetted but quite different as between a communist system to a capitalist system, and such differences have contributed to making the people living under communist rule risk avoiders to a greater extent than those living in a capitalist system.

When determining how income should be used, consumption plays the active role, while saving is the passive ingredient. Saving is often considered a residual and also as deferred consumption.[3] Saving (consumption) decisions are based on future expectations, and a number of reasons people save a portion of their income exist. A

[1] As described above, plus the possibility of incarceration or even death.

[2] The definition of saving is the act of not spending one's income; it either can be on a voluntary basis or as an involuntary act enforced by government

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

list of reasons to save[4] is followed by a brief explanation and comparison of saving in a capitalist system as opposed to a communist system. Saving motives may be (1) to purchase property, (2) to guard against possible unemployment, (3) to provide educational opportunities for children, (4) to provide for old-age security, (5) to protect against future illness, (6) to accumulate wealth for its own sake, (7) to earn more income, (8) to provide for the well-being of heirs, and (9) to purchase consumer durables.

I. People save in a capitalist society to purchase property (house, apartment, apartment building, condo, business structure, land). Under a communist system, there were severe restrictions on property ownership. The communist philosophy was that land was a free gift of nature and no one should own it or any structure located on it: it should be collectively owned. Again, in a communist system businesses are located in structures owned by the state as part of the business and, even where the business is privately owned, the structure is rented from the state.

Farms are owned by people in a capitalist system (individuals and corporations), and the land is owned by the person or organization that does the farming or is rented out. In contrast, three forms of land ownership evolved under communism: state farms, state-owned "factory"-style farms; collective farms, where the workers divided the work and share whatever income the state provides for their produce; and private plots of land allocated for private cultivation. In all cases the land was state-owned; except that in the third case the land was leased in perpetuity to the cultivator or until the family died out or left the area. Since labor was regarded as the only

[4] The list is not prioritized and there are four additional motives: (1) frugality or the dislike of spending; (2) the inability to spend because income is so large that spending all or a reasonable percent (as measured against average income) is not possible; (3) savings by default occurs, as where there is little or nothing to buy (a shortage system occurs where controlled prices are set below the market price) or where the products are so poorly made that demand does not exist in the relevant price range; and (4) forced savings where the government substitutes required bond purchases (sending to the state) out of monetary wage income and the bonds cannot be redeemed until maturity (5, 10 or 30 years hence or maybe never).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

earned gain,[5] rent was perceived as an unearned gain,[6] and no land could be privately owned, so that the motivation to save for the purchase of land was non-existent.

2. A second motive to save is in preparation for a period of unemployment. In a capitalist system, there are periods when the economy does not perform at a level which will insure that everyone who is willing to work at the prevailing price can find employment. Saving are fostered by the survival instinct. In the communist system, employment was guaranteed and unemployment was not officially recognized. If a person did not voluntarily participate as a worker, the state would place him in a position of its choosing. In extreme cases, if a person refused to participate in a state-approved employment venture, he would be removed from society and sent to a work camp where employment was forced. Since employment was guaranteed (unemployment being virtually an illegal act), income was guaranteed, and there was no motive to save for an event that is not going to happen.

3. Education is another reason that people in a capitalist system save part of their income. Providing higher education for one's children usually requires sacrifice by the parents.[7] Most (sometimes all) of the expense is born by the student's[8] family.

Communist systems, on the other hand, provided free education to the young from as early an age as three. Free education continued throughout the students' academic lives from grammar school through high school, and for those approved for higher education, to college and graduate school. Not only were tuition fees nonexistent, but the state-approved books were provided for free and a stipend was paid

[5] Labor makes a contribution to the value of the product as an input and is thus rewarded for the effort; the reward of a wage is thought to be an earned gain.

[6] The payment of rent will not make the product from the land better. Rent does not contribute to real value and thus is thought to be unearned.

[7] "Much" meaning when explicit and implicit (as measured by opportunity costs) costs are added together.

[8] Students are often required to work to help cover costs.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to university students.[9]

4. Saving to provide security for old age is another strong motivating force in a capitalist society. From their inception, communist systems espoused the idea of providing for the elderly.[10] Though old-age benefit programs often fell short of providing enough funds to sustain the aged at levels comparable to their previous standard of living, the state-supported program reduced the incentive to save for the future.

5. In the East European communist systems, medical care was provided free; savings were not required and there was no requirement to consider future years through the purchase of insurance. Such income as workers received could thus be spent on projects that would provide current rewards, and people tended to live for the here and now.

6. An additional reason for saving is simply to accumulate wealth. In a capitalist system there is theoretically no limit to the accumulation of wealth. Wealth can be stored in many forms – money, bank accounts, land, buildings, precious metals, jewels, paintings, sculptures, stocks and bonds. Besides wealth for its own sake, wealth brings both security and power; power to purchase goods and services. In a communist system, the process of saving wealth for its own sake, for security or for power was difficult and generally discouraged. Most means of holding wealth were non-existent, such as land, buildings, stocks and private bonds. The first two were state-owned, and the latter two were not available since there was no corporate ownership of the means of production. If money was held in bank accounts, government had access to it with the possibility of severe penalties if the savings were deemed to be illicit. Problems of discovery, security, transportation and determination of value accompany savings in the form of cash, precious metals, jewels and valuable collections. Because of the difficulty in holding wealth, the

[9] Both explicit costs (those mentioned) and implicit costs (low wage payment to workers) of a university education would be low.

[10] If a person chose to continue working beyond the retirement year, benefits would not be reduced as is the case in the U.S. Old-age receipts were considered a right that had been earned while working.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

motivation to add to its stock through saving was lessened. Also, wealth as a source of power could jeopardize the owner if the use of their wealth brought them into conflict with those possessing political power (communist party members or government leaders and bureaucrats).[11]

7. Another motive to save is to derive income from investments. The communist system only permitted personal savings accounts in state banks and government bond purchases. The interest rates were very low and provided very little motive to save.

8. Providing security for one's heirs is an additional reason for saving in free societies. There are few restrictions in a capitalist system in passing on wealth to one's heirs, and although estate and inheritance taxes exist in many capitalist countries they generally apply only after a substantial tax-free deduction has been allowed. In communist systems, inheritance is very limited because inheritance is seen as an unearned gain and it is difficult to accumulate wealth. Rental income is practically non-existent and interest income is a very small amount, plus there is limited profit potential because of government ownership of almost all enterprises. Some personal articles of property may be inherited but anything beyond that was often confiscated; thus if substantial wealth holdings are accumulated, subversive means were necessary to circumvent confiscation after death. If illegal means could not be found to bypass the confiscation process upon death, then the most likely option was to spend income during the individual's lifetime, i.e., to live for the present.

9. Saving for consumer purchases (autos, household belongings, and vacations) is another reason people forego present consumption for future benefits, and this has been a strong motivational force for past capitalist generations. The incentive to work and save was reduced in communist systems. Except for the purchase of durable

[11] Hoarding is a form of savings. People hoard through fear (when a system operates as a shortage system) or the prospect of future profits (black market). Usually the type of goods hoarded are consumer nondurables (non-perishables such as canned goods or clothing) and certain types of consumer durables (TV's, washers, etc.). Hoarded goods can be consumed or can be quickly exchanged for cash. This motive to save is usually a short term savings function.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

goods, people had less motive to save. They became accustomed to living in the present and were less prepared to plan for the future.

Differences Between Cash and Credit Systems

Being an all-cash system played a major role in making communism a present-oriented system. All payments for labor efforts were made in coins and currency, and one knew immediately what one earned or spent. However, when purchases are made on credit, there is a certain intangibility associated with the reward. Likewise, when paying by credit, a feeling of disassociation is pervasive in the transaction. The connection between being paid for one's effort (labor) and the satisfaction of spending what one has earned becomes indirect and remote. A cash system emphasizes the present, by forcing the consumer to be aware of his present purchasing decisions; whereas a credit account directs thought to future considerations.[12] Because the communist system restricted credit buying, the populace lived on a day-to-day basis.

When credit is available, as in Western countries, the emphasis of living is shifted to the future. Consumption is more likely to be based on expectations of future income. "Buy now, pay later" is a standard cliche uttered in a credit-based system. Present decisions are based on future expectations. Because future projections determine current activity, planning increases in importance and the present becomes less significant.

Credit and Unemployment

A credit system creates debt that often promotes a sense of financial insecurity. Without credit and consequent debt, the individual is less likely to be concerned with the future and how he will pay his debt, and is allowed to concentrate on the present. The monthly bills which represent payments for durables (cars), homes (mortgages), and consumer goods previously purchased are not a problem in a credit-less society because such things cannot be obtained on credit.

[12] Paying by check reduces risk (losing check or check book, robbery, wrong purchase), aids record keeping, and provides proof of purchase.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

It is interesting to note that unemployment compensation programs were unnecessary in the Soviet Union and Soviet Bloc countries. There were simple reasons for this: (1) the government was actively involved in placing people in jobs; (2) there was a high demand for labor as there was an emphasis on expanding the state-managed economy; (3) unemployment was an illegal act (an idle worker is a nonproductive worker). Profits were not a government objective; the cost of hiring a worker was secondary to the employment of that worker; (4) unemployment was not recognized even when it did exist (caused by imperfections in the system which were concealed in all official documents); and, (5) temporary unemployment, where it existed, was not feared, because living standards would not fall. Housing was not owned by the individual, public transportation was at a nominal price, basic foods were offered at subsidized low prices, and there were limited leisure activities on which money could be spent. In other words, short-term unemployment, when it did occur, was not very costly on an individual basis.

Government in the communist countries wanted high employment rates as a goal and thus pursued a policy where employment would be promoted. Unemployment compensation programs were not implemented because they were thought to be a reward for idleness. It was legal to change jobs, but labor turnover was kept to a minimum through various techniques which made changing jobs difficult. Such techniques included tying housing to particular enterprises, limiting construction of living quarters so as to keep housing tight, and not providing the public with information about job opportunities (no employment advertisements were found in newspapers and there were no private employment agencies to coordinate jobs with people or people to jobs). Most job opportunities were conveyed through word of mouth.[13]

If a planned society is to be successful, there has to be consis-

[13] Ironically, changing jobs was easy because the labor market acted as a shortage system (the quantity demand exceeded the quantity supplied at the prevailing wage). Wages were kept artificially low to insure low costs of production. Thus a contradiction existed whereby labor turnover measures were in conflict with low wages.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

tency in its inputs to guarantee a particular set of outputs. Predictability with respect to labor quality and quantities is essential. Planning in the short term has to be successful if long-term goals are to be achieved. The present is emphasized to insure that the future will be taken care of.

The Impact of Religion

The two religions of Islam and Christianity[14] emphasize life after death, and whether there is life in the hereafter will be determined by the actions of an individual during his/her life here on earth. Karl Marx believed that in capitalist societies religion served as a means whereby the masses would be mollified in their state of poverty by the belief that the "poor would inherit the earth," that they would reap their reward for tolerating their existing plight after death. They would lose this reward if they participated in violent action (revolution) in this world. Marx described religion as "the opiate of the people." Communism was to be the new religion; the religion of the *Now*. Instead of sacrificing the present for the future, people were to live for the present because there was only one life, life on earth. Religion was based on fear, the fear of the unknown and especially the fear of dying. There is no life after death; live for the present, Marx would say. Get all the benefits from sacrifices while living, because when you are dead, you are dead. Don't plan for tomorrow; live for today because that is all there is. Don't plan for your children, for the State will take care of them. Such beliefs served to restrict human concern to the immediate present.

Income Tax and Sacrifice

Revenue to cover government programs and obligations was financed through means that did not affect current labor input. Even though Marx wrote of progressive income taxes as an equitable means of raising funds and redistributing income, income taxes (which affect

[14] These are two of the three dominant religions found in the former Soviet Bloc nations and Soviet Union. The third was Judaism, but Judaism emphasizes life before death more than the idea of life after death, and differs from Islam and Christianity in this respect.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

labor contributions) in the former communist countries played a very minor role. "From each according to his ability to each according to his contribution" was to be the abiding *principle* during the initial state of communist implementation, but from a practical standpoint, very little income tax was paid.

In point of fact, however, people living in the communist states made significant, if involuntary, sacrifices from the years 1917 through 1991, experiencing revolution, civil war, purges, collectivization and famine, which are all well documented. There were also sacrifices brought about by inefficiency of government monopoly, ineptness, cheating, lying and secrecy, as well as by inequitable income and wealth distribution. But for a system to prosper and grow, sacrifices out of current income (savings) have to be made so that future income from investment would become larger. To save is a sacrifice of the present for the future. In a private enterprise system, individuals (as workers, housewives, shopkeepers, etc.) make decisions about savings and also real investment (as do private businesses); they themselves participate in determining the extent of their sacrifice. In the communist world, the Party, government and/or bureaucrats made the decision of sacrifice for the populace. The people were not given the option to choose the type or extent of sacrifice they were required to make. Often they were not even aware they were making a sacrifice. People were paid an amount of income in wages (cash) equal to the amount of goods made available at prices determined by administered decisions. When disequilibriums developed, they would be taken care of by a "turnover tax" (a charge added to the consumer price), queuing, shortages (surpluses), and/or blackmarketing (or some combination of the above); everything produced for the consumer was to be sold to the consumer. For those goods produced that were not for the benefit of the consumer, a separate accounting system that only included financial institutions, government (party) and enterprises was devised that operated outside the cash system of the common consumer.

The following is the process by which the system operated. In a communist system it was assumed the macro system was in balance by use of "Material Balances" and "Financial Balances" through administrative decision making. Micro balance was probably seldom achieved in individual markets, as witnessed by surpluses and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

shortages. Here we are concerned with macroeconomics and the equilibrium that exists where the value of the product is equal to the value of the income generated in the production of that product.

The government would pay out cash wages and interest as a payment for producing private (individual) consumer goods and government collective consumer goods (services). Then the government would take back an amount out of the wages through cash savings (voluntary or forced) and taxes (paid by cash) which would then pay for the government consumer goods. The government would also produce investment goods which would be financed by a payment to the enterprises through an accounting process in the central bank. This would represent a non-wage payment to labor and thus be savings (in capitalist terms, the savings could be thought of as some form of rent, interest and profits income, all kept by the enterprises as business retained earnings). The nonpayment of income to labor (the only factor of production recognized) can be thought of as a tax, (forced non-cash savings) and would equal government investment.

Why must the system be in equilibrium? Because the government pays out in cash wages an amount equal to the value of consumer goods (quantity times government-controlled prices) plus government services. The cash wages are greater than the value of the consumer goods, with the government taking back the difference to pay for the government services provided.[15] There is also the government that produces goods that are never available to labor (consumers) to buy, i.e., investment goods. These goods would include plant, equipment, housing and even military goods. Since the government, through its enterprises, is selling to itself and buying from itself, it can determine the value of the goods by setting the price of the goods it is selling and buying by itself. There is no cash that is exchanged in the process; it is a bookkeeping procedure.[16]

[15] Most government services are not bought by labor (consumers); i.e. they are provided "free", in the form of politicians, bureaucrats and party members.

[16] Whether the pricing process was correct was often incidental relative to other goods and only showed up when sales were made on the international market. As the economies move into free market operations, the problems of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The nature of the products produced was determined by an administrative process that may not have had any relevance to reality, but the value of the products was equal to the value not received by labor. In a capitalist society, the income payments would be to the private sector in the form of rent to land, interest to capital and profits to the entrepreneurs, but in a communist state there are no private lands, capital markets, or individual profit seekers, so the self-determined rewards go to the state.

The people in authority made the decisions as to worker compensation that was of little relationship to the total value of all goods and services produced by those workers.[17] The difference between the two was the value of sacrifice being endured. The value of that sacrifice (savings) would then be used for real investment. The investment decision would be determined by some formula established by people in authority. Whether the investment formula was connected to economic knowledge was often of little or no consideration. The important point is that common people were not expected to, nor allowed to, make decisions, nor were the people in authority wanting them to make decisions about the future. By requiring people to live in the present, the job of those making decisions about the future would be easier, more certain and, in their minds, better.[18]

the above practice have become abundantly clear. Enterprises are inefficient to the point of shutting down.

[17] In a capitalist system, the difference would be construed as rewards to land (rent), capital (interest) and the entrepreneur (profit). Ironically, Marx wrote that the value of a product is determined by the labor value embodied in that product, but in those states that based their rules of behavior on the philosophy of Marx, they never paid the worker the value of the product the worker produced.

[18] Leaders appealed to the people to sacrifice present rewards so their children could benefit in the future. Whether the leadership or the people really believed these promises is irrelevant to the fact that such statements served to keep people's minds on the ordeal of the present and leave the future to care of itself since they could do nothing about it.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Rewards

Not only were people unaware of the sacrifices described above, but they were often unaware of the products derived from their sacrifices. Certainly they were aware of roads being built, dams constructed, space exploration advancements and many other collective achievements, but it would be hard to understand how unfelt sacrifices could lead to those collective benefits. More often than not, government and Party would demand and grab the accolades of success as if it were their sacrifices that resulted in progress and growth. In a privately dominated system, rewards are directly or closely related to individual sacrifice through the device of ownership or tax payments. "I own my own house and I got it through hard work and saving" would not be an uncommon statement made by a citizen living in a capitalist system, nor would the statement "My taxes paid for that ---" (fill in the blank). For a system to progress and prosper, the citizenry must feel they are part of the system, both from the reward side and sacrifice side. People in the communist states were only remotely involved with benefits and costs.

"Now" versus the Past

In communist thought, even learned personal experiences from the past were sacrificed to the Communist present. Religion was de-emphasized not only because it took people's minds off the present and encouraged them to live for a future after death, but also because in its traditional form it served to detract from the present by reminding people of the past. In Communist states, most churches, mosques, and temples were closed to religious services, and those that were not destroyed were converted to other uses, such as warehouses, offices or factories, or allowed to fall into disrepair.[19] Time-off to celebrate religious events was disallowed, as was the time needed to train priests or lay people for religious office. People were to forget

[19] As time progressed and rules were relaxed and recognition of architectural accomplishments were once again appreciated, some of the religious structures that survived were restored to their original splendor.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the past and concentrate on the present.

Not only was religion sacrificed but cultural and national differences were minimized. National consciousness encouraged people to remember the past and this might inspire them to plan the future in ways contrary to the desires of the political elite. In the USSR there was to be only one type of man, the Soviet Man, and there was even an attempt to impose one language, a politically sanitized version of Russian, on the entire population. Holidays based on ethnic tradition were discouraged or banned. There were celebrations, to be sure, but they were to be few in number and only celebrations of communism – such as May Day in place of the celebration of Spring and *the* Revolution in October. The emphasis was on cultural and political homogeneity, on reducing slack time, increasing output, and above all on persuading people to think only of meeting the prevailing goals set by the political elite.

Conclusions

The communists created a system in which the individual was to abandon personal decision making. This involved eliminating memories of the past which might inspire personal goals incompatible with the goals of the prevailing Marxist system. Instead of the people making decisions about the future based on their past experiences as individuals or as nations, the government and party imposed all choices. So far as the people were concerned, they lived in a *Now society*.

Generations reared under Communism are now being asked to change their way of viewing life – to change the pattern governing their entire outlook, shaped as this was under Communist tutelage. Instead of a system which deprived them of any experience in decision making, imposing on them a pattern of security in which decision making was not only unnecessary but was strongly discouraged, they are being offered a system which rewards judicious decision making and requires individuals to cope with change and the insecurity which change entails. They are pressured to plan for the future while facing the problems of the present, something that few have any experience of doing. The greater the emphasis in a capitalist system on consumption and accumulation for the future, the greater the need for experience in coping with fear and insecurity, and yet

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

they have little experience of either. The greater the security, the less the fear, and the greater the tendency to think only of the present. The less the fear of the future, the less the productivity; the less the productivity, the lower the growth; the lower the growth, the greater the possibility of eventual failure of the entire society. Now-oriented societies have insecure futures.

Substantial responsibility for the individual's personal future has now been returned to the individual, and the greater the possibility of failure, the greater is the level of fear. People work out of fear[20] and the fear becomes greater the more they have to lose. If individuals once realize that the obligations of the future are largely dependent on their own efforts, they are pushed to work harder (longer hours per day and more days per week, month and year or through greater physical and/or mental effort). The citizens of the former communist countries are ill-prepared for the adoption of capitalism. They have not been trained to prepare for the future, and they have little experience from the past to help them cope with the new present. There aren't even the necessary social programs found in existing capitalist systems to impede the spread of despair in the face of insecurity about the future. The existing capitalist systems of the western world evolved to their present organizational structure in a culture which allowed people to learn by experience and to plan their present lives with a view to their future. Each system is a shrouded image of others but with basic characteristics that unite them as capitalist states. They all arrived in their present position through the experiences gained from conflict, enlightenment, controversy, progress, failure, development, and hardships. There were rewards and pain (not equally shared) over the past centuries, but people learned to expect change and to adjust their lives to it. The adjustments were made on the basis of past experience, and were reinforced by hope for the future.

The former Soviet bloc countries are asking their people to

[20] Many people work because of the joy they derive from accomplishments achieved through their jobs, and also the rewards of money earned. There are also people who work because of aid given to others. Fear, though important, is only one motivational force.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

change in short order to a psychological environment that is alien to them. Communism eliminated their accumulated experiences from the past, and deprived them of any knowledge of how to plan for the future. A new economic order will inevitably emerge in each of the former communist countries, but whether it will match the existing order of Western capitalism is questionable since the populace is psychologically unprepared for Western economic systems. The people know the conditions under which they have lived, but they are not experienced in making decisions about the future. The pattern that will emerge will undoubtedly be influenced by the length of time that communism has been dominant in the different countries, with those that have been under communism for the shortest period of time having the best chance of adapting psychologically to the challenge of capitalism, and those that have been longest subject to the psychological conditions of the *Now*-society finding it the much harder to break into a new pattern of life.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Genetic and Environmental Influences on Morphological Characteristics

M. Nikolova
University of Plovdiv, Bulgaria

A study was made of 36 body and 11 craniofacial measurements in a socially selected sample of 251 Bulgarian families, comprising parents and their children over 15 years. The midparent-offspring and parent-offspring correlation coefficients indicated that the extent of genetic determination varied considerably from one measurement to another. There was evidence of directional dominance for three body traits and for two craniofacial traits. The pattern of different parent-offspring correlation was incompatible with the hypothesis of X-linkage heredity.

As is well known, most anthropometric traits have a Gaussian distribution. This distribution may be produced by the action of either genetic of environmental factors or a combination of both. The study of polifactorial heredity involves an estimation of the influence of the genotype and of the environment.

The research of C. Susanne (1982, 1983), K. Sharma (1984, 1987), B. B. Little (1987), and L. H. Schmitt et. al., (1988), show the degree of genetic control over the studied traits. Some of the authors also investigate the presence of sex-linked factors. C. Susanne found sex-linked factors for neck and calf circumference, biacromial diameter and head length. This study presents the heritability of anthropometrical traits in a sample of Bulgarian population.

Material and Methods

Thirty-six body and eleven cranio-facial measurements were recorded from 251 families containing 502 grown-up children. The subjects were Bulgarians living in Plovdiv. Families were socially selected in that the children were mainly students of high schools of Plovdiv. The age and sex differences among the family members

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

were removed by normalizing the traits. The resultant scores would have a mean of zero and a standard deviation of 1.0, since the adjustment was made in the generations of both the children and their parents. These standard scores were, in turn, used to compute intrafamilial correlations of offspring on parent for all possible combinations of son, daughter and offspring with father, mother and midparent. The effects of X-linked loci on traits were studied by Mathers and Jinks' method (1963).

Results and Discussion

Analysis of parent-child correlation coefficients

The results on intrafamilial correlation analyses are presented in table 1-2. For every studied morphological traits the midparent-offspring correlation is higher, and the single parent-offspring correlation is lower. This conforms to the polygenetic model.

In a panmixic population, for polygenic traits produced only by autosomal genetic factors, the following correlation coefficients would occur:

midparent - child	0.71
parent - child	0.50
sib - sib	0.50

Table 1 shows that the observed correlation coefficients are mostly lower than the expected values, both for midparent - child and parent - child. The highest correlations are for stature, suprasternal and sitting height, lower extremity length and first segments and bitrochanteric and bicristal diameters. A group of traits has lower correlation coefficients (trunk height, biacromial diameter, weight, bicondilar humerus and femur breadth and arm length). After them are the chest diameters, most circumference measurements, skinfolds, foot and hand length and breadth. Results confirm the known data for stature recorded by other authors (Susanne, C., 1975; Muller, W. H., 1978; Wolanski, N., 1977, 1984; Siniarska, A., 1983; Kobylianski, E., 1984; Schmitt et. al., 1988); for sternal height, bitrochanter and bicristal diameters (Susanne, C., 1975).

Family studies of cranio-facial traits (Szopa, J., 1978; Weaver,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

D.P., 1980; Susanne, C., 1983; Sharma, K. 1984, 1987) show their genetic determination. Correlation coefficients are higher for the head height and facial length, for bigonial breadth (Susanne, C., 1975) and for head length and circumference and ear measurements (Sharma, K., 1987) in comparison with other head and facial traits.

Studies of the Bulgarian population indicate that the correlations for craniofacial traits are lower than those for the body measurements. Higher are the correlation coefficients for the head circumference and head breadth in comparison to head length and head height for the bizygomatic breadth in comparison with facial length.

The parent - child and midparent - child correlation coefficients are very often lower than the theoretical coefficients except for stature, sternal height and bizygomatic breadth. We must separate the environmental factors and the factors of dominance responsible for these low correlations.

Analysis of the correlation coefficients sib - sib

The observed correlation coefficients between sibs are higher than parent - child correlations: weight, upper arm circumference and skinfolds. That means that these traits have higher genetic determination in comparison with parent - child correlation. That makes inexact the valuation for genetic determination of the traits on the basis of sib - sib correlations.

It is recognized that environmental differences affect intrafamilial correlations. The environment is more similar in a sibship than between relatives of different populations. Thus, for measurements influenced by environment, such as weight, upper arm circumference, skinfolds, the sib - sib correlation coefficients may be higher than the parent - child coefficients because the environmental factors may present a more important contribution to the correlation between sibs than to the parent - child correlation. This fact means that the comparison between intrafamilial correlations permits us to evaluate environmental and dominance effects.

Dominance

It is known that dominance diminishes the correlation coefficients between relatives, but parent - child correlations are more influenced by factors of dominance than correlations betweens sibs,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Traits	n	P/Ch 1004	MP/Ch 502	M/S 177	F/S 177	M/D 205	F/D 205
Theoretical value		0,50	0,71	0,71	0	0,50	0,71
1. Weight		0,34	0,43	0,30	0,36	0,37	0,35
2. Stature		0,53	0,59	0,51	0,52	0,47	0,50
3. Sternal height		0,51	0,57	0,45	0,47	0,53	0,50
4. Sitting height		0,45	0,55	0,42	0,38	0,51	0,49
5. Symphision height		0,36	0,45	0,32	0,28	0,49	0,35
6. Lover extr. length		0,46	0,55	0,39	0,35	0,50	0,42
7. Thing length		0,44	0,53	0,46	0,42	0,40	0,48
8. Subthigh length		0,42	0,51	0,47	0,36	0,44	0,56
9. Truno height		0,35	0,44	0,33	0,38	0,42	0,26
10. Upper extr. length		0,31	0,39	0,24	0,27	0,37	0,35
11. Upper arm length		0,26	0,36	0,21	0,28	0,36	0,32
12. Forearm length		0,26	0,28	0,18	0,20	0,34	0,30
13. Foot length		0,22	0,25	0,19	0,16	0,32	0,22
14. Foot breadth		0,17	0,27	0,16	0,14	0,20	0,18
15. Hand length		0,18	0,20	0,20	0,12	0,25	0,16
16. Hand breadth		0,19	0 29	0,17	0,20	0,22	0,18
17. Biacromial diameter		0,33	0,44	0,40	0,15	0,34	0,45
18. Bicristal diameter		0,38	0,41	0,20	0,45	0,40	0,29
19. Bitrochanterial diameter		0,45	0,46	0,33	0,35	0,40	0,35
20. Sagital chest. diameter		0,27	0,31	0,28	0,31	0,24	0,26
21. Transverzal chest diameter		0,24	0,32	0,20	0,30	0,27	0,21
22. Chest circumference		0,27	0,35	0,18	0,31	0,35	0,25
23. Sitting circumference		0,35	0,41	0,27	0,33	0,37	0,30
24. Thigh circumference		0,32	0,40	0,28	0,28	0,36	0,35

TABLE 1 Estimates of familial correlation coefficients for body and craniofacial traits.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Traits	P/Ch	MP/Ch	M/S	F/S	M/D	F/D
n	1004	502	177	177	205	205
25.Calf circumference	0,31	0,38	0,23	0,27	0,38	0,25
26.Upper arm circumf.(ret.)	0,25	0,35	0,20	0,25	0,27	0,30
27.Upper arm circumf.(contrac.)	0,23	0,31	0,19	0,21	0,22	0,26
28.Forearm circumference	0,22	0,32	0,23	0,20	0,22	0,25
29.Waist circumference	0,26	0,35	0,14	0,29	0,33	0,21
30.Neck circumference	0,27	0,33	0,32	0,14	0,34	0,28
31.Bicondiler humerus breadth	0,28	0,35	0,24	0,26	0,20	0,23
32.Bicondiler femur breadth	0,30	0,41	0,20	0,27	0,37	0,29
33.Triceps skinfold	0,22	0,33	0,20	0,19	0,24	0,26
34.Subscapular skinfold	0,20	0,33	0,28	0,19	0,18	0,16
35.Suprailiac skinfold	0,24	0,33	0,12	0,30	0,23	0,29
36.Biceps skinfold	0,26	0,36	0,20	0,10	0,42	0,31
37.Head length	0,29	0,37	0,23	0,31	0,33	0,30
38.Head height	0,30	0,33	0 38	0,16	0,20	0,44
39.Head breadth	0,35	0,46	0,32	0,35	0,36	0,38
40.Head circumference	0,44	0,52	0,33	0,43	0,50	0,48
41.Facial length	0,33	0,44	0,38	0,25	0,29	0,40
42.Bizigomatic breadth	0,53	0,62	0,55	0,53	0,50	0,52
43.Bigonial breadth	0,32	0,40	0,20	0,32	0,40	0,36
44.Nasal height	0,34	0,45	0,38	0,23	0,40	0,34
45.Nasal breadth	0,27	0,36	0,20	0,31	0,33	0,32
46.Ear height	0,33	0,44	0,29	0,45	0,25	0,33
47.Ear breadth	0,22	0,30	0,15	0.30	0.20	0.22

P/Ch-parent/child;MP/Ch-midparent/child;M/S-mother/son;F/S-father/son;M/D-mother/daughter;F/D-father/daughter

TABLE 1 (Continued) Estimates of familial correlation coefficients for body and craniofacial traits.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Traits		Sib-Sib	B/S	S/S	B/B
	n	382	131	74	46
Theoretical value		0,50	0,35	0,75	0,50
1.Weight		0,54	0,50	0,55	0,58
2.Stature		0,57	0,52	0,57	0,62
3.Sternal height		0,57	0,52	0,59	0,61
4.Sitting height		0,52	0,45	0,49	0,62
5.Symphision height		0,46	0,30	0,51	0,59
6.Lover extr.length		0,48	0,30	0,53	0,60
7.Thing length		0,46	0,29	0,50	0,60
8.Subthigh length		0,48	0,32	0,62	0,49
9.Trunc heigth		0,36	0,20	0,29	0,50
10.Upper extr.length		0,40	0,35	0,45	0,40
11.Upper arm length		0,34	0,30	0,32	0,40
12.Forearm length		0,30	0,35	0,34	0,36
13.Foot length		0,26	0,28	0,35	0,32
14.Foot breadth		0,25	0,20	0,31	0,25
15.Hand length		0,19	0,10	0,15	0,17
16.Hand breadth		0,26	0,20	0,28	0,31
17.Biacromial diameter		0,37	0,23	0,46	0,44
18.Bicristal diameter		0,43	0,25	0,38	0,50
19.Bitrochanterial diameter		0,52	0,33	0,55	0,62
20.Sagital chest diameter		0,37	0,20	0,42	0,48
21.Transverzal chest diameter		0,25	0,20	0,24	0,25
22.Chest circumference		0,41	0,32	0,45	0,46
23.Sitting circumference		0,44	0,25	0,45	0,62

Table 2 Estimates of familial correlation coefficients for body and craniofacial traits

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Traits		Sib-Sib	B/S	S/S	B/B
	n	382	131	74	46
25. Calf circumference		0,41	0,20	0,40	0,60
26. Upper arm circumf. (ret.)		0,42	0,25	0,52	0,49
27. Upper arm circumf. (contrac.)		0,40	0,29	0,49	0,42
28. Forearm circumference		0,36	0,21	0,42	0,37
29. Waist circumference		0,43	0,33	0,41	0,55
30. Neck circumference		0,38	0,40	0,52	0,43
31. Bicondiler *humerus* breadth		0,38	0,20	0,37	0 36
32. Bicondiler femur breadth		0,42	0,20	0,45	0,57
33. Triceps skinfold		0,46	0,30	0,47	0,60
34. Subscapular skinfold		0,44	0,35	0,42	0,54
35. Suprailiac skinfold		0,49	0,29	0,56	0,62
36. Biceps skinfold		0,43	0,25	0,55	0,48
37. Head length		0,44	0,27	0,43	0,61
38. Head height		0,32	0,10	0,45	0,27
39. Head breadth		0,35	0,44	0,25	0,36
40. Head circumference		0,45	0,26	0,47	0,49
41. Facial length		0,36	0,27	0,47	0,32
42. Bizigomatic breadth		0,61	0,42	0,64	0,76
43. Bigonial breadth		0,38	0,24	0,30	0,58
44. Nasal height		0,42	0,34	0,43	0,47
45. Nasal breadth		0,30	0,22	0,25	0,32
46. Ear height		0,35	0,37	0,27	0,40
47. Ear breadth		0,33	0,12	0,23	0,63

B/S-brother/sister; S/S-sister/sister; B/B-brother/brother

Table 2 (Continued) Estimates of familial correlation coefficients for body craniofacial traits

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Trait	parent-child correlations	sib-sib correlations
Sitting height	mother-♀, father-♀ > father-♂	brothers > sisters, brother/sister
Symphision height	mother-♀ > others	brothers > brother/sister
Lower extremity length	mother-♀ > others	brothers > sisters, brother/sister
Subthigh length	father-♂ < others and father-♀ and mather-♂ > mother-♀	sister > brothers > brother/sister
Thigh length		brothers > sisters, brother/sister
Truno height	mother-♀ > father-♀	brothers > sisters, brother/sister
Upper extremity length	mother-♀ > mother-♂	
Upper arm length	mother-♀ > mother-♂	
Forearm length	mother-♀ > mother-♂, father-♂	
Foot length	mother-♀ > others	
Hand length	mother-♀ > father-♂	
Bitrochanter diameter		brother/sister < others, but sisters < brothers
Bicristal diameter	father-♂ and mother-♀ > mother-♂ and father-♀	brother/sister < others and sisters < brothers
Diacromial diameter	father-♂ < others and mather-♂ and father-♀ > mather-♀	brother/sister < others and sisters > brothers
Bicondylar femur breadth	mother-♀ > father-♂, mother-♂	brother/sister < sisters < brothers
Bicondylar humerus breadth		brother/sister < others
Sagital chest diameter		brother/sister < others and sisters < brothers

Table 3 Body and craniofacial traits with significant differences ofthe correlation coefficients

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Calf circumference	mother-♀ > mother-♂, father-♀	brother/sister < others and sisters < brothers
Chest circumference	mother-♀ > mother-♂, father-♀	brother/sister < others
Waist circumference	mother-♀ > mother-♂, father-♀	brothers > others
Neck circumference	father-♂ < others	brother/sister < others
Calf skinfold	father-♂ < others and father-♀ and mother-♂ < mother-♀	sisters > brothers > brother/sister
Suprailiac skinfold	mother-♂ < father-♀, father-♂	brother/sister < others and sisters < brothers
Subscapular skinfold	mother-♂ > father-♀, mother-♀	brothers > sisters, brother/sister
Bizygomatic breadth		brother/sister < sisters, brothers, but brothers > sisters
Head circumference	mother-♂ < mother-♀, father-♀	brother/sister < sisters, brothers, but brothers > sisters
Nasal height	father-♂ < others, but father-♀ and mother-♂ < mother-♀	
Facial length	father-♂ < mother-♂ and father-♀ and mother-♀ is among them	sisters > brothers, brother/sister
Ear height	father-♂ > others	
Ear breadth	father-♂ > mother-♂, mother-♀	brothers > sisters, brother/sister
Bigonial breadth	mother-♂ < others	brothers > sisters, brother/sister
Head height	father-♂ > mother-♂ and father-♀ and mother-♀ is among them	sisters > brothers > brother/sister
Head length		brother/sister < sisters, brothers. but brothers > sisters
Nasal breadth	mother- others	

Table 3 (Continued) Body and craniofacial traits with significant differences of the correlation coefficients

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

and the parent-child correlation is lower than the sib-sib correlation.

The difference between two coefficients is always positive, i.e., sib - sib correlation is higher than parent - child correlation. They are only significant for weight, some circumference traits and skinfolds. For other body and craniofacial traits the differences are not significant.

For some measurements, the correlation coefficients between sibs are higher than 0.5: stature, sternal height, sitting height, bitrochanter diameter and bizygomatic breadth. These measurements are unlikely to be much influenced by dominance. These results confirm other authors' results for stature (Susanne, C., 1975; Hewitt, D., 1967); for sternal height and bitrochanter diameter (Susanne, C., 1975) and included sitting height and bizygomatic breadth.

For the weight, upper arm circumference, waist circumference and old skinfolds which are mesolabil traits, the significant differences between correlations parent - child and sib - sib we connect with the environmental factors. The same is for the other circumference measurements, where the correlations are lower than 0.5, but where the difference parent - child - sib-sib is not significant.

For other body measurements (upper extremity length and 1st segments, chest diameter, biacromial diameter) for which the difference is not significant, but correlations are significantly lower than theoretical, we cannot exclude the influence of dominance. Chest diameters can be influenced by environmental factors too (e.g. physical activity).

All craniofacial traits except for bizygomatic breadth are influenced from dominance, especially head length and ear breadth, where the difference parent - child - sib-sib is significant.

X-linked factors

Mather and Jinks, 1963 studied the influence of one X-linked locus on the family correlations and showed that the following relation held:

rsisters > rbrothers > rbrother/sister
rfather/daughter = rmother/son > rmother/daughter > rfather/son

The comparison of the different parent - child coefficients and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

of the different coefficients between sibs (see table 3) shows that the hypothesis of the presence of X - linked loci is unlikely for the body and facial measurements studied. Certain differences are significant but all are in contradiction with the hypothesis of X-linked genes. Only for subthigh length, biacromial diameter, neck circumference, head height and facial length do both correlations support the hypothesis of X - linked genes. (See table 3). The biceps skinfold (subthigh skinfold) present a father-son correlation significant lower than the other parent - children correlations, but mother-daughter correlation is higher. In spite of this, the trait may be a candidate for the hypothesis of X-linked genes, and this is supported from significant differences between sib - sib correlations. These results confirm the known data for biacromial diameter and neck circumference (Susanne, C., 1975) and do not confirm X-linked genes for head length and subthigh circumference (Susanne, C. 1975) and bigonial breadth and nasal height (Sharma, K., 1987). Results show that many body and craniofacial traits are primarily determined by autosomal genes with considerable environmental modifications.

References

Hewitt, D.
1957 Some familial correlations in height, weight and skeletal maturity. *Ann. Hum. Genet.*, 22, 26-35.

Kobyliansky, E.
1984 Heritability of some morphological traits in Man: Regression and Segregation Analysis of Familial Resemblance. *Z. Morph. Anthopol.*, 75:1, 77-84.

Little, B.B., R.M. Malina, P. H. Buschang, and I. H. DeMoss
1987 Sibling Correlations for Growth Status in Schoolchildren from a Rural Community in Oaxaca, Mexico. *Ann. Hum. Biol.*, 14:1, 11-22.

Mather, K., and L. Jinks
1963 Correlations Between Relatives Arising from Sex-Linked Genes. *Nature*, 198, n.4877, pgs. 314-315.

Muller, W.H.
1978 Transient Environmental Changes and Age Limited Genes As Causes of Variation in Sib-Sib Parent-Offspring Correlations. *Ann. Hum. Biol.*, 5, 395-397.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Sharma, K.
1984 Familial Resemblance for Head Size in a Punjabi Population of India. *Ann. Hum. Biol.*, 11, 577-580.
1987 Familial Resemblance for Craniofacial Traits in a Punjabi Population. *Z. Morph. Anthrop.*, 77:2, 157-165.
Schmitt, L.H., and G. A. Harrison,
1988 Patterns in the Within Population Variability of Stature and Weight. *Ann.Hum. Biol.*, 15:5, 353-364.
Siniarska, A.
1983 Sib-Sib Similarities and Differences. *Hum. Biology*, 5.
Szopa, J.
1978 Genetic Determination of the Human Head Measurements. *Genet. Polonica*, 19, 345-351.
Weaver, D.D.
1980 Familial variation of head size and adjustment for parental head circumference.*J. Pediatr.*, 96, 990-994.
Wolanski, N.,
1977 Genetic and Ecological Control of Human Growth. In Growth and Development. Physique (Eiben, O., Ed.), Akademiai Kiado, Budapest.
1984 Quantitative Traits Variability of Genetic and Non-Genetic Nature. In Genetics of Psychomotor Traits In Man. *Int. Soc. Sport. Gen. Somat.* Warsaw, 313-323.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Germanic Earth Goddess in *Beowulf*?

Frank Battaglia
College of Staten Island, City University of New York

Does Beowulf oppose the Earth Goddess of ancient Germanic religion? The possibility of such an interpretation follows upon the discovery that the name *Gefion*, by which early Danes called their female chthonic deity, may occur in the Old English poem five times. The first two monster episodes – wherein the name seems to occur – have close parallels in Scandinavian literature. Because of these parallels it has long been thought that the Anglo-Saxons who invaded England brought a version of *Beowulf* with them from the continent, where their background was similar to the Danes. Focusing on the places where Gefion's name may be understood to occur – hereafter called "the Gefion passages" – can give us new insight into the meaning of the poem for its original Germanic audience, perhaps in the sixth century.

The five Gefion passages seem to highlight the championing of a new order antagonistic to goddess worship. In light of what appears to be an elaborate thematic statement about patrilineage in the poem, the new order may also have entailed a change in kinship systems. Grendel and his mother may stand as types for earlier, matrilineal tribes. Further, the hall which is the object of struggle between Beowulf and the first two monsters may symbolize the consolidation of new hierarchal social organization among the northern Germanic peoples.

The Roman historian Tacitus in chapter 40 of *Germania*, written at the end of the first century A.D., describes the Angles as worshipping Mother Earth (*Terra Mater*) under the name of Nerthus and practicing her ritual at her sanctuary on an island in the Ocean. H.M. Chadwick identified early Anglian Nerthus, Scandinavian Freyia, and Danish Gefion as "local forms of the chthonic [female] deity... whose cult was known to all Teutonic peoples" (1907, 263, 256, 289). He found Zealand, on which Copenhagen is now located,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to be the island of early Anglian worship. Place name evidence connects Nerthus to it, and both the *Ynglinga Saga* (5) and the *Edda* of Snorri Sturluson (*Gylfaginning* 1) attribute the very creation of it to Gefion (Chadwick 1907, 258-259, 267, 289n1; Turville-Petre 1964, 187-188). Axel Olrik similarly saw the island as Gefion-Nerthus' religious center (1910, 23). Archaeological finds at Rappendum may now have located an actual site of rituals Tacitus described (Glob 1969, 167-169).

Etymologically uncertain, Nerthus may refer to "strength"; it corresponds exactly to Scandinavian *Niorð*. Written sources later than Tacitus describe Niorð as a god, not a goddess, but some Swedish place names indicate that the deity was female. Freyia and her brother Frey first appear as the children of Niorð; titles rather than proper names, *Freyia* and *Frey* mean "Lady" and "Lord." Gefion comes from the root "to give" and emphasizes the providing of well being and fertility. Freyia is often referred to in scaldic verse as *Gefn*, "gift" (Turville-Petre 1964, 171-178). Names like *Gabiae*, inscribed with goddess triads in Celto-Germanic contexts, assert the same *giving* quality attributed to Freyia and denoted in the name Gefion (Ellis Davidson 1964, 112-113; de Vries 1956-1957, 2: 293, 317).

In Old English poetry, *geofon* is a word for ocean which has been seen since Jakob Grimm (1968, 198) as related to the name Gefion of the Danish Earth Goddess (Ellis Davidson 1964, 114). Power to divide land and sea is shown by representations of Gefion in Norse literature; *Ynglinga Saga* (5), for example, describes her creation of Zealand by ploughing a section of Sweden into the sea. In a passage we will look at again, Snorri tells us "*Þa fór hon í Jǫtunheima ok gat Þar iiii sonu við jǫtni nǫkkurum; hon brá Þeim í ynxalíki ok færði Þá fyrir plóginn ok dró landit út á hafit ok vestr gegnt Óðinsey, ok er Þat kǫlluð Selund; Þar byggði hon síðan*" (Snorri 1966, 6) – "Next she went to a giant's home and there begot four sons with a giant. She shaped them in the likeness of oxen, yoked them to a plow and broke up the land unto the sea westwards opposite Odenso; it was called Selund [Zealand], and there she dwelt afterwards" (1932, 3-4). Niorð, Freyia and Frey are also intimately linked with the sea. Niorð is related to water by Icelandic and Norwegian place names like *Njarðvik* (Niorð's creek) and **Njarðarey* (Niorð's island). Niorð's home in Sweden is

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Noatun (the place of ships, harbor). One of Freyia's names in scaldic poetry was *Mardǫll*, the first part of which probably derived from the Norse word for ocean, *marr*. Frey owned *Skíðblaðnir*, the best of ships (Turville-Petre 1964, 163-178, 189). Each of these deities was invoked for fertility. The role of sea vessels in Teutonic fertility rites has been followed back into the Bronze Age (de Vries 1956-1957, 1: 108ff). The fertility of animals and the earth itself, however, is seen as an older aspect of these deities than the bounty of the sea (Turville-Petre 1969, 261). Tacitus wrongly supposed (*Germania* 9) that some of the Suebi (a division of the Germans which included the Angles) venerated a female earth and fertility deity as the result of the importation of her cult – because her emblem was a ship.

Gefion 1. Line 49.

The Germanic Chthonic Goddess first seems alluded to in line 49. In each of the Gefion passages the word in the poem can be understood as referring to the sea as well as the Goddess who has power over it. This is the only instance of the five where Friedrich Klaeber did not gloss the word in question as "ocean." Recounting the end of Scyld's funeral we are told:

Þā gȳt hīe him āsetton	segen gyldenne
hēah ofer hēafod,	lēton holm beran,
Gēafon on gārsecg;	him wæs geōmor sefa

(Klaeber 1950, 11. 47-49; all references to this edition, unless noted).

Klaeber translated *Gēafon* (uncapitalized) as past plural of the verb to give, a reading which we have seen to be in keeping with the etymology of the Goddess' name. I would suggest:

> Then yet they set for him a golden banner
> high overhead, let water bear him,
> Gefion, on the waves; the heart was sad for them.

Taking *gēafon* to mean Gefion the Goddess here is rendered more secure by the fact that in Norse mythology Scyld was the husband of Gefion (Chadwick 1907, 267, 289-290). In the quoted passage from

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Ynglinga Saga, we have been told that after Gefion created Zealand by ploughing, she lived there. The passage continues: "*Hennar fekk Skyolder, sonr Óðins; Þau bjoggu at Hleiðru*" – "Skjold [Scyld], Odin's [Othin's] son, took her to wife and they lived in Leidra [Leire]" (Snorri 1966, 6; 1932, 4). We shall examine this reference to Leire again below. Here we may with some confidence conclude that in a poem about Scyld's funeral for an Anglo-Danish audience, the word *gēafon* could probably not have been used without invoking Gefion.

The *Beowulf* poet has already emphasized that Scyld's funeral was conducted according to his own wishes (11. 29-30). *Lēton* (1. 48) makes the Scyldings active agents and Gefion a more passive acquiescent in Scyld's rites. Perhaps she numbers among those whose heart is sad in line 49. Even though Scyld is borne by the sea, the power of the Goddess connected with it is minimized.

But in a ritual practice whose vestige is perhaps seen here, the Goddess had endured, and her consort was ephemeral. A tradition of sacred fertility kings, whose claim to regality consisted of being the mate of the goddess, is known in Scandinavia prior to the late 5th century, and Chadwick saw the title *frēa Inqwine*, applied to Hrothgar (1. 1320), as possibly a relic of such a practice (1907, 252-253). Gefion's relation with Gylfi, a king of Sweden, may be preserved in exactly this light (Ross 1978, 159-161). Even the priest in the ritual described by Tacitus has been understood as the husband of Nerthus, as have bog-men, most dating from after 200 B.C., found especially in Denmark (Chadwick 1907, 256, 320-323, 342-343; Turville-Petre 1964, 172; Glob 1969, 156-192; Schutz 1983, 323, 336; Bennike and Ebbesen 1986). In addition to direct evidence for this tradition we may seek insight from an analysis of Irish sources, for Francis Byrne has found the closest European parallels for archaic features of Irish kingship in pre-Christian Scandinavia. A ritual mating with the local Goddess seems to have been the basis of inauguration of each of the 150 tribal kings reigning at any given date in Ireland in the first centuries A.D. The earliest traditions about Medb, for example, identify her as the Goddess whose wedding periodically created a king at Tara (Byrne 1973, 7-27; Dillon 1946, 38-41; Mac Cana 1955-1956, 1958). In line 49 of *Beowulf* we appear to have token acknowledgement of the deity who, along with a tradition which made ritual marriage with her the basis for elevation of a chosen male, has

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

been superseded.

What replaced her ritual was dynastic rule by the Scyldings. That Scyld modified an older tradition is clearly implied by *Ynglinga Saga* (5), for we are told first that Gefion dwelt (*byggði*) in Zealand, then that she and Scyld dwelt together (*bjoggu*) at Leire on the island. It is likely on the face of it that socially significant changes are involved in the distinction. The scope of such changes will perhaps be clearer after consideration of three aspects of Gefion's background. Veneration of the Germanic female earth deity apparently: (1) derived from the Neolithic period; (2) was rooted in the culture of tribes emphasizing a female kinship system; (3) took place in the context of egalitarian social relations.

Descent from the Neolithic of religious practices honoring Gefion has already been strongly hinted by *Ynglinga Saga*, for it links her with two of the technologies which originated in that epoch: domestication of animals (her ox-sons) and agriculture (ploughing). A stone engraving from Züschen of cattle yoked to a cart confirms the antiquity of the goddess cult described by Tacitus; the engraving, found in a burial monument, has been interpreted as a stone age representation of Nerthus (Schutz 1983, 106-107, 336). The Züschen artifact dates from about 2000 B.C. when the use of copper was already known, but identification of Zealand as a special place for the female chthonic deity's veneration provides a clue that her cult may have been organized there much earlier.

Archaeologists observe familiarly that Zealand offers the highest concentration of Neolithic tombs in Denmark (Glob 1967, 68). These are enormous monuments, commonly but not exclusively megalithic, in which communal burial was often practiced. Lili Kaelas has recently identified Zealand as the "nucleus" of the oldest megalithic tombs in the area, "urdolmens" (1983, 80). Figure 1 dramatically illustrates the importance of Zealand in the Neolithic. It diagrams areas of Scandinavia where polygonal or rectangular stone chambers were in the majority. Zealand shows high densities of both types, and indeed has the greatest concentration of megalithic tombs in Europe (Jażdżewski 1973, 71). These evidences of the island's central significance in the Neolithic make it conceivable that the "the chthonic [female] deity... known to all Teutonic peoples" had been associated with it from that era. We may note also Byrne's finding

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

that sites at which the ancient Irish tribal kings were inaugurated regularly show a "close association... with Neolithic burial mounds" (1973, 20). A connection between the thousands of Neolithic communal tombs of Denmark and Grendel's Mother will be proposed below.

Chadwick forcefully propounded two aspects of the veneration of Gefion I am focusing on here, ending *Origin of the English Nation* on the note that matrilineal social organization, lasting from the stone age, "survived until the iron age was well established" (340). He found that agricultural tribes based on blood relations on the women's side had constituted Germanic society since the Neolithic, and he astutely (Gough 1961, 552-553) used matrilocal residence (which he called Beena marriage) as evidence of matriliny (328-340). Subsequently Bertha Philpotts and E.A. Thompson have also concluded from written evidence that a shift from matrilineal kinship was underway among the Germans at the beginning of the historical period (Philpotts 1913, 270; Thompson 1965, 17) [Note 1]. Traces of widespread European matriliny descended from the Neolithic have been seen in the archaeological record (Childe 1964, 123; Gimbutas 1989, xx; Green 1986, 73), as has a belief system in which a Goddess was primary (Crawford 1957). A method for discerning matrilineal social organization from settlement data has been proposed (Battaglia 1990).

Considerable social parity in the late prehistoric period is increasingly being attested by archaeology. A recent study of *Social and Religious Organization in Bronze Age Denmark* found that pronounced social stratification was not part of the Bronze Age in Scandinavia and northern Germany and, further, that at the end of the period a "decline occurs in social complexity" and a "more egalitarian social organization" emerges (Levy 1982, 55, 70, 113-115; for Zealand, Kristiansen 1978, 182). One study which appears to challenge such conclusions nonetheless states that as of the third century A.D. the elite which existed in Danish society were still "commoners who tilled their own fields" (Jensen, 1982, 249). The Chauci have been characterized as "a free peasant society enjoy[ing until the first century A.D.] a balanced egalitarian social structure, reflected in the equality of property ownership" (Schutz 1983, 320). Reported aspects of the cremation urnfields of Schleswig-Holstein, the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Anglo-Saxon homeland, are of considerable interest. "Cultural... [and] population continuity" between 1100 B.C. and 500 A.D. has been indicated. In the Bad Segeberg field of 3000 grave deposits between 500 B.C. and 50 B.C.: the burial urns had seen household use, suggesting routine connection with work-a-day affairs among the deceased; neither weapons nor imported articles were part of grave inventories; male and female burials cannot readily be distinguished; and conclusions of social differentiation are not allowed by the very uniform grave equipment. As Herbert Schutz sums it up: "The evidence of the early cultural phases points to an egalitarian society" (1983, 314-316, 350).

Two studies of Danish burial practices have now distinguished a "northern" zone where until about 400 A.D. "socially egalitarian clan structures" ("*socialt udglattende slægtsstrukturer*") continued; women held prominent positions while status was indicated with "no noteworthy degree of wealth" ("*ikke hvad vi vil kalde rigdom*") (Ringtved 1986, 103, 105 [Figs. 8, 12], 169; Hedeager and Kristiansen 1981, 127).

Returning to the situation in *Beowulf*, Line 15 can be seen as showing that portions of Scandinavian society continued to enjoy egalitarian social relations within the time frame of the poem: the Danes were leaderless (*aldorlēase*) until Scyld came. Coercive government is certainly represented by Scyld's terrifying his neighbors and forcing them to pay tribute. Although a recent study found the exercise of centralized power by Germanic rulers to be the result of external influences, Chadwick's judgment that this passage in *Beowulf* shows the "ambition" and "the extent of the power of some kings during the migration period" seems more plausible (Swanton 1982, 24; Chadwick 1907, 178-179).

But an actual Danish king named Scyld who gave name to the dynasty probably never existed: "the Scyldingas did not get their name because they were really descended from Scyld, but Scyld was created in order to provide an eponymous father to the Scyldingas" (Chambers 1967, 77). From the clear identification of Scyld with raiding, weapons and treasure, we can conclude that warlords with *permanent* retinues had emerged in Denmark by the fifth century (Ringtved 1986, 197; Hedeager and Kristiansen 1981, 158). Thompson provided a historical analysis of such transformations among earlier

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Germans which had made fighting "a regular and highly respected means of passing one's life" (1965, 53; cf. Chadwick 1907, 180-181). As Lotte Hedeager put it in her archaeological view of this process in the late Roman period: "war, pillage and robbery were necessary measures to sustain the system" (1987, 133, 138). Continuing autocratic kingship begins in Denmark with the Scyldingas, "sons of (the) shield," although Scyld himself was fictitious.

Written records provide sketchy and sometimes conflicting accounts of the first Scylding rulers, before figures of doubtless historicity appear, the first of whom is the Healfdene of our poem (Chadwick 1907, 152). Several Scylding encampments, i.e., sites where a lord with his retinue resided, may have existed in Denmark contemporaneously with each other and with matrilineal tribal organizations of long standing. Perhaps the camp of the Honor-Scyldings (11. 464, 1710) was such a site. But two early sources identify Scyld himself with Leire: *Ynglinga Saga* (5), as we have seen, and *Skjoldunga Saga* (Chambers 1967, 365).

Both the historical Hrothgar and his nephew Hrothulf are associated with a court *at Leire* which Chambers believed to be the site of Heorot: "we may be fairly sure that the spot where Hrothgar built his 'Hart Hall' and where Hrothulf held that court to which the North ever after looked... was Leire, where the grave mounds [now] rise out of the waving cornfields" (1967, 19-20). Labeling Heorot "greatest of hall buildings" (*healærna mæst*, 1.78) the *Beowulf* poet claims central power for its king in a hierarchal social order. As Hedeager explained a recurring change in Germanic society: "The old tribal structure based on ties of kinship and alliance transformed gradually into... [a] class-divided state" (1987, 137; Ringtved 1986, 169). The great hall may have consolidated and celebrated a new institution in Denmark, the king whose standing warband enforced his authority.

Furthermore, we have seen *Ynglinga Saga* call Scyld a son of Othin. There is considerable reason to believe that the new kingship established at Leire was the center of a new religious practice, involving worship primarily of male gods. The ninth-yearly sacrifice of men and animals at Leire was described by Latin chronicler Thietmar. Chadwick has analyzed the ritual as an early example of *The Cult of Othin*, and he argued that *Beowulf* shows this religion was

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

already known to the Danes (1899, 24-27, 53; 1907, 245). Axel Olrik, while questioning Thietmar's location of the sacrifice, understood the chronicler to have described a ritual actually conducted until the mid-tenth century and associated with the residence of the Danish kings which had, in the time of Hrothgar, been at Leire (Olrik and Hollander 1919, 330-333). Healfdene's holding a "great sacrifice at midwinter" (*"blót mikit at miðjum vetri"* [Snorri, 1907, 251]) for the extension of his own life, and keeping prisoners for a time before "hanging them" (*"suspendio consumpsit"* [Saxo 1859, 80]) may be additional indicators that the ritual which Thietmar described was practiced by the Scyldings. Since "the cult of Othin seems to have been practiced chiefly, if not exclusively, at the courts of kings and nobles" (Chadwick 1899, 28, 70; Turville-Petre 1972, 14-19; Hald 1963, 107-109), we may presume that the religion's emphasis on martial glory provided a rationale for the emerging system of social inequality. The hall which the historical Hrothgar appears to have erected at Leire can be understood as representing another innovation in Denmark: a system of belief in which male gods were central and which justified new social conditions.

To this picture of what Heorot may have stood for, a third innovation should be added and that is patriliny, a kinship system based on relations through men. The opening lines of the poem seem to announce this theme, for *cyning* and *ætheling* in lines 2 and 3 are in form patronymics (Chadwick 1907, 315); the declared subject is thus the glory and courage of central figures of male kinship systems. Scyld's hereditary kingship would not even have been possible without such a system. The establishment of patrilineally inherited kingship (and hierarchy) among the Danes may be reflected in a statement of Snorri. He tells us Healfdene was assured in response to the sacrifice already referred to: *"Þat myndi Þó vera CCC vetra, er engi myndi vera i ætt hans kona eða ótíginn maðr"* – "that for three hundred years there would be no women among his descendants, and no man of common rank" (1907, 251; Garmonsway and Simpson 1968, 126). Hedeager sees a shift to a "strongly patrilineal" system from one in which women formerly had more significant roles (1987, 128 [on bilateral kinship, see note 7 below]). Heorot is said to be the greatest mead hall the children of men, *yldo bearn* (l. 70), had ever heard of. Word choice throughout *Beowulf* emphasizes male kinship.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Grendel, who opposes Heorot, is said to have been driven *mancynne fram* (1.110), literally "from man kin;" for clarity I will translate such phrases "from male kin." The poem says the Christian deity thus punished the kin of Cain for the murder of Abel. But if the historical Hrothgar's court was not Christian, this charge may well not have been part of the case against Grendel in the original work from which derive *Beowulf* and *Grettis Saga* (Chambers 1967, 50-53; Chadwick 1959). At any rate, following the exile from male kin, "every misbegotten thing awoke," with *untȳdras* (1.111) being the word used to complain about Grendel's lineage system. Several of the specified creatures, most clearly giants and elves, share a connection with large stones in Scandinavian mythology (Turville-Petre 1964, 235; Glob 1967, 148-150; Motz 1982, 71; Schutz 1983, 169-170), which suggests that traditions concerning them originated in the Neolithic. We have already seen that the matrilineal tribes of early Germany may have descended from that epoch. The poem's original audience perhaps understood Grendel (and the other misbegotten creatures) as representing old matrilineal tribes whose religion and egalitarian social order had suffered from the martial consolidation which made Heorot possible [Note 2]. Grendel, we are shortly told, was the "enemy of male kin," *fēond mancynnes* (1.164).

"(Male) relative (by marriage)" has been suggested as an original meaning for *mǣg*, the common word for kinsman in the poem (Markey 1987, 315). Such a usage may have developed in a society where men married into a (female) family (by blood).

The most telling indication of patrilineal kinship being a key issue in the poem is that the very first words out of the hero's mouth apparently commit him, his followers and his nation to the new order. "*Wē synt gumcynnes Gēata lēode*," says Beowulf (1.260): "We are of male kin, people of the Geats." *Gumcynnes* emphatically specifies patriliny. The next line – "*ond Higelāces heorðgenēatas*" ("and Hygelac's hearth companions") – presumably associates Beowulf and his men with a hall, and thus identifies them as agents of a hierarchal social order. This declaration is followed by the naming of Beowulf's father (11. 262-263).

Gefion 2. Line 362.

Having satisfied the shore guard with his espousal of social

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

organization comparable to that of the beleaguered Danes, Beowulf is conducted to the king. In asking Hrothgar for an audience for the Geats, Wulfgar appears to use Gefion's name for a second time:

Hēr syndon geferede,	feorran cumene
ofer Geofenes begang	Gēata lēode (11. 361-362).
Here have arrived,	come far
over Gefion's realm,	people of the Geats.

When Gefion was last named, she shared in the loss at Scyld's funeral. Since then, however, a kingship based on patrilineal heredity has been established and the hall of inequality has been built. In these lines it is possibly implied that the long trip of the Geats over water has been daring, because Gefion now represents a potential adversary. At any rate, Danes still appear to believe in her.

Begong, translated here as "realm," recurs in the poem, apparently counterposing domains of earth and sky. Beowulf's killing of Grendel will lead to the observation that no one "under the realm of heaven," *under swegles begong* (1. 860), was better than he. Grendel's mother will be said to "guard the realm of water," *flōda begong... behēold* (11. 1497-1498). Hrothgar will describe himself as having had no adversary *under swegles begong* (1. 1773) for fifty years. Having defeated Grendel and his mother, Beowulf will offer to return to Hrothgar "over the realm of water" (1. 1826) if he hears of further trouble, and later will demonstrate his continuing power against water spirits by swimming back to his homeland "over the realm of waters" (1. 2367) with the battle gear of thirty men after Hygelac is killed.

Gefion 3. Line 515.

In Unferth's account of Beowulf's swimming match with Breca, the Goddess' name again seems to be mentioned. I have always found the episode curious: Why is Beowulf so hostile to the sea that he must swim with a sword in his hand? Perhaps because water was especially thought the domain of the chthonic female deity. We have already seen linguistic and literary evidence of this association; archaeological testimony may also be considered in the form of ritual deposits of valuables in wells and bogs, sometimes clearly linked with

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

goddess rituals and sometimes on sites continuously in use from the Neolithic (Lauring 1958, 135, 109; Ellis Davidson 1964, 40-41). Goddess figurines have been found in association with such deposits (e.g., Glob 1969, 152-154, 180-183); when male and female votive pairs have been recovered in marsh contexts, the female deity often has been more emphatically rendered (Schutz 1983, 331-334).

"Gefion welled up in waves," "*Geofon ȳðum wēol*" (l. 515), says Unferth, when Beowulf and Breca made test of the waters for pride. Although Beowulf's corrective version of the story does not mention Gefion by name, the phenomena she was said to be responsible for – welling up and waves – both recur. Beowulf, indeed, says he had more hardship from waves, *earfeðo on ȳðum* (l. 534), than any other man. The swimmers carried swords to protect themselves from whales, Beowulf says, presuming from them a hostility so virulent that the weapons had to be carried unsheathed. The water welling up, *wado weallende*, (l. 546) separated Beowulf from Breca after he had made a point of staying near him through five nights. It was precisely waves becoming rough – *hrēo wæron ȳða* (l. 548) – and stirring up the spirit of the ocean fishes which incited the attack. The ocean acted malevolently to divide the swimmers, and its agitation caused the sea denizens to attack. Beowulf was dragged to the bottom, *grunde* (l. 553), dispatched that attacker, but again met creatures whose favorite terrain was the sea ground, *sægrunde* (l. 564) – a development which will become more significant in the next Gefion passage. Beowulf killed nine sea-beasts [Note 3]; God's candle of light came in the morning. Beowulf repeats the claim that he was more distressed on the ocean streams than any other man, and says that he fought the hardest fight ever heard of under heaven's vault. Water welling up again (l. 581) this time supported him and carried him to land.

The enmity of Gefion possibly hinted in line 362 now seems explicit in Beowulf's description of a prior event. The Goddess' realm apparently rose up against him, but neither the ocean nor its creatures could best him. He had, he said, more sea strength (l. 533) than any other man. This episode can be understood as a debate within the poem about the past and future of the Scandinavian people. Beowulf's adolescent victory over Gefion's water monsters may refer to a change which had already taken place among some of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

the northern European tribes.

The Cimbri who shocked Rome in the late second century B.C. may have been the first Northern Teutonic people of the early historic period to install patriliny and hierarchy in place of more communal matrilineal relations. Classical sources refer to them as ruled by kings (Chadwick 1907, 310). Difficult to detect in the archaeological record, they have been recently described as pushed into "social imbalance" by an "unfavorable environment," especially the loss of farmland due to marine incursion (Schutz 1983, 350; Kristiansen 1978, 182). Chadwick has seen them as providing at least an early antecedent of *The Cult of Othin* in the North (35-38). In the vernacular record, however, the Geats are considered the first people in the North to worship Othin, as is suggested by the facts that *Gautr*, the equivalent of Geat, is one of the names of the god in Old Norse and, most significantly, that he was called *Gautatȳr*, that is, "God of the Geats" (Chadwick 1907, 270; see Chadwick 1959, 186). Possibly relevant are three "representations of one-eyed faces, presumably representing the god Odin" from north Jutland in the early Roman period (Liversage 1980, 132). As a war god whose cult was aristocratic, Othin was the mayor Northern deity most antithetic to the peaceful, settled, egalitarian communities in which matrilineal tribes may have continued from the Neolithic. Its funereal and other practices were suited to traveling bands and in many ways insisted on the primacy of men. For example, in the practice called suttee the wife of a chieftain was killed upon his death and buried with him (Chadwick 1899, 27-28, 45-46, 56-57, 70).

Referring to an old contest and suggesting that Beowulf had trouble with Gefion because of his own pride, Unferth may imply that accommodation is possible with the matrilineal agriculturalists who venerate the Goddess. The peacefort, *freoðoburh*, of line 522 may have come into existence because such an agreement had been worked out in the past. Since fortified sites of the Early Iron Age are such a rarity in Northern Europe we perhaps should consider in relation to this *Beowulf* reference the sites Borremose, Priorsløkke, and Olmer's Dyke (Liversage 1982, 87-93). Beowulf's reply to Unferth, however, disdains any possibility of accord. His unsheathed sword was defense, not provocation. He acted so fiercely only because of the adversity he faced.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Beowulf ends by taunting Unferth and even his whole people for cowardice. With three slighting references to Unferth's ethnicity in six and a half lines (11. 595-601), closing with alliteration between *Gār-Denum* and *Gēata*, Beowulf boasts that Geatish courage and strength will be demonstrated to Grendel not very long from that moment (11. 601-603). Geats have precisely the power Danes lack. No resolution except battle victory is conceivable.

Gefion 4. Line 1394.

In the previous passages what appears to be the name of the Danish Earth Goddess occurs in the speech of the *Beowulf* poet, of Wulfgar and of Unferth. Beowulf's reply to Unferth, while claiming recognition for his own achievements, undercut the importance Unferth attached to Gefion. But the Goddess' name next seems to occur in the mouth of Beowulf himself in the form of a boast that her power will not avail against him. This comes in the midst of his preparation to fight Grendel's mother. The episode involving her brings to a crescendo several of the themes we have been following.

A list of anti-patrilineal offenses is cited against Grendel or his kin, beginning with the charge that his maternal line descended from a twisted father-kin murderer. When Grendel's mother is introduced we are told that she had to dwell in terrible water since the point in Judeo-Christian time when Cain killed his brother, "kin on his father's side," *fæderenmæge* (1. 1263). Relationship through the male parent apparently made the crime worse. From that deed came many fated spirits, of whom Grendel was one (11. 1265-1266). Second, Grendel is again called "enemy of male kin," *mancynnes fēond* (1. 1276). Third, Hrothgar's people "do not know of any father" for Grendel – *no hīe fæder cunnon* (1. 1355). So being without proper father lineage is also charged against Grendel's line. If Grendel and his mother represent the matrilineal tribe, the institution itself is impugned as originating in patrilineal murder, maintaining an enmity against male kinship, and amounting to systemized bastardy.

After this indictment Hrothgar describes the secret land, country of wolf cliffs [Note 4], held by the monster and his kin. "There the mountain stream disappears downward under the darkness of the bluff, water under the earth. Not far from here measured by miles," he goes on, "stands the lake over which hang frosty trees; a wood with

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

roots fast covers-over the water:

	ðǽr fyrgenstrēam
under næssa genipu	niÞer gewīteð
flōd under foldan.	Nis Þæt feor heonon
mīlgemearces,	Þæt se mere standeð
ofer Þǽm hongiað	hrinde bearwas,
wudu wyrtum fæst	wæter oferhelmað
	(11. 1359-1364).

The compound of *helm* in the last word of this passage suggests that the trees protect the lake.

Beowulf's boast will begin by saying that his enemy will find no protection (*helm*, 1. 1392), and other aspects of this landscape will be invoked. But the passage continues with Hrothgar saying: "There may be seen each night a grim wonder, fire in the water. No one lives, of the children of men, so wise that he knows that bottom" –

Þǽr mæg nihta gehwǽm	niðwundor sēon,
fȳr on flōde.	Nō Þæs frōd leofað
gumena bearna.	Þæt Þone grund wite
	(11. 1365-1367).

The ground under the lake entails an ultimate, something completely unknown to men's progeny. *Grund* may have had an ancient association with the Germanic Earth Goddess. Many, if not all, instances of the word in *Beowulf* seem to evoke her presence. We have already seen the word used twice in the swimming match to refer to the place where, curiously, the sea creatures preferred to be; apparently they were strongest there. At Grendel's Mother's lake we now see water departing under the earth. This figure serves, thematically, to assert the primacy of the earth power, even over water. Water may cover ground elsewhere, but here water is seen as *being covered by* earth. Furthermore, the sea in which Beowulf swam against Breca and Grendel's Mother's lake are both shown to have ground under them. The chthonic aspect of the Goddess is primary, even though she has power over the sea and it has been described as her realm.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

No "children of men" (*gumena bearna*) know the ground at the bottom of Grendel's Mother's lake. Denoting a male relationship, the phrase may emphasize an antagonism between the new order and Grendel's kin. But, not specifying a kinship system, the phrase does not so clearly designate patrilinealists as words like *gumcynnes* and *mancynnes* used elsewhere. For in fact, members of matrilines have commonly recognized biological paternity. But the possibility that members of a patrilineal system are meant here is borne out in the repetition of *bearn* a few lines later. Responding to Hrothgar, Beowulf is called *bearn Ecgþēowes* (1. 1383), "child of Ecgtheow," his male parent.

Despite the fearsomeness of Grendel's Mother's domain, Beowulf immediately declares himself ready to win fame by enacting vengeance for her attack on the hall. He promises that the perpetrator of that raid (referred to by the male pronoun) will find no escape into the eerie landscape he has been told about:

Ic hit Þē gehāte:
nō hē on helm losaÞ,
nē on foldan fæÞm,
nē on fyrgenholt,
nē on Gyfenes grund,
gā Þær hē wille
(11. 1392-1394)

I promise it to you: he will not escape into
refuge,
Neither in the embrace of the earth,
nor in the mountain wood,
Not (even) in the ground of Gefion, go where he
will.

Whether his opponent enters the earth like the disappearing stream, is covered by a strange wood like the lake, or even gets to the ground never seen by children of men and is protected by Gefion herself, Beowulf promises to seek out and destroy the adversary. He is prepared to combat the Germanic Earth Goddess herself. The creature he meets may be the Goddess' representative or, more specifically, a guardian spirit.

When Beowulf enters the mere he is perceived immediately by the one who "guarded the realm of waters" – *flōda begong... behēold* (11.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

1497-1498).

Earlier Wulfgar announced the arrival of the Geats *ofer Geofenes begang*. "Gefion's realm" was there seen as a kenning for water. Here someone who guards the "realm of water," clearly, would be closely allied with Gefion. This guardian aspect of Grendel's Mother, repeatedly invoked, for example *grundhyrde*, "ground-keeper" (1. 2136), seems an important link with the tradition of female guardian spirits (O.N. *dísir*) which lasted throughout the first millennium in northern Europe. The tradition is most elaborately preserved in Scandinavia, where public pagan practice held on the longest. O.E. *ides*, used twice in *Beowulf* of Grendel's Mother [Note 5], may be related to O.N. *dís* (singular, female guardian spirit) and has been found sufficiently alike for cross influence even if the etymologies are separate (Turville-Petre 1964, 222).

The subject area is very complicated; I will only sketch the possibilities and problems of seeing Grendel's Mother in this tradition. A *dís* was usually female, and possessed conflicting aspects, sometimes acting like what is called in Christian legend a guardian angel (Ellis Davidson 1964, 61; Turville-Petre 1964, 232), but also having power over the dead and choosing who would die. In this capacity she might be feared, and it is an expansion of this aspect, merged with other types of feminine power, which is exemplified in Grendel's Mother and a host of dangerous female figures of Germanic mythology.

As Hilda Ellis Davidson put it: "the heathen Germans believed in fierce female spirits doing the commands of the war god, stirring up disorder, taking part in battle, seizing and perhaps even devouring the slain" (Ellis Davidson 1964, 62). The ferocity and battle prowess of some of these figures is not open to question, despite a recent objection that Celtic rather than Germanic tradition has made Grendel's Mother so formidable [Note 6]. If the warrior females of early Germanic myth turn out to be more bloodthirsty than their Celtic counterparts, it may be because women officiating at human sacrifice were part of Teutonic experience from the second century B.C. Cimbri to the tenth century A.D. Viking Rus (Chadwick 1899. pp. 37-38, 47-48; Smyser 1965). The Cimbri priestesses and the Rus angel of death were patently serving the war god like the spirits described by Ellis Davidson. But as mythological figures the *dísir*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

probably antedate the Cimbri by many centuries.

That the *dísir* are figures of antiquity is suggested by place names which refer to them. The word *Disin*, probably meaning "meadow of the disir," by which five sites in south-east Norway are called, "appears to date from the prehistoric period." The element of the word which means *meadow* "was often applied to places of public worship." For these reasons E.O.G. Turville-Petre has concluded that "the cult of the *dísir* was of great age." Thus belief in these spirits can be seen as dating from long before classical authors wrote about the people of the North. Place names link the *dísir* with large stones throughout Scandinavia. In Iceland rocks are commonly called *Landdísasteinar* (stones of the land-*dísir*); Norway records *Disahroys* (stone pile of the *dísir*); in Sweden is found *Diseberg* (rock of the *dísir*) (Turville-Petre 1964, 225).

These connections hint that the *dísir* derive from the Neolithic period, whose responsibility for agriculture and megalithic architecture has already been noted. The concept of *dísir* may have developed from a practice of ancestor veneration associated with the funerary monuments of that era. Over four thousand megalithic communal tombs are known in Denmark and hundreds in southern Sweden; non-megalithic communal barrows constructed during the same period can be found in lesser numbers on the Danish mainland (Ellis Davidson 1967, 38; Jażdżewski 1973, Figs. 3, 1). Colin Renfrew, who developed the analysis that Neolithic communal tombs were created as territorial markers, said the users of each monument consisted of "an extended family or lineage, all its inhabitants tracing their descent, or that of their spouse, back to a common ancestor" (1973, 137). If the common ancestors were female, and thus the groups matrilineal, the concept of powerful female forbears looking out for their family trees might readily have evolved over time (Hempel's *matronae*, 1966). The presence of "*Idun*" as a Goddess name on Zealand (Olrik 1910, 23) makes possibly important the semantic relationship Brate drew (1911-12, 147-148) between that name and the *dísir*.

In the archaeological survey *Pagan Scandinavia* Ellis Davidson remarked that the continued use of Neolithic communal tombs over a long period "implies fixed ritual continuing over centuries. One purpose of the rites at the tomb must have been to ensure the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

continuing fertility of the soil" (39).
Characterizing ancient fertility beliefs which survived into the historical period, she stated elsewhere: "In the fertility religion, the emphasis is not so much on a world of the gods to which man attains after death if he fulfills certain conditions as on the veneration of dead ancestors, and the need for the living to remember them at various feasts and festivals, to visit their graves, and perhaps to sit on their burial mounds for wisdom and inspiration" (1964, 155). One passage in which the *dísir* seem to be dead ancestors has been summed up with the observation: "fertility cults cannot always be distinguished from the cults of the dead" (Turville-Petre 1964, 225).

Neolithic communal burial rituals may have given rise to belief in the *dísir*. Such a background would explain the repeated association of these spirits with clans or lineage groups. As Turville-Petre put it: "one of the functions of the *dísir* was to support the clan by promoting the fertility of its women" (1964, 224). Large standing stones at the corners of some Neolithic communal tombs in North Germany are still known as "guardian" stones (Schutz 1983, 101). We may note also that Scandinavian elves have been considered "male counterparts of the *dísir*," and that the association of elves with ancient burial mounds is very pronounced in folklore (Turville-Petre 1964, 231; Ellis Davidson 1964, 153-158). In origin the *dís* would thus have been like the Irish banshee, literally *ben síde*, "woman of the mound," with *síde* commonly referring to megalithic monuments of the prehistoric period (Byrne 1973, p. 20).

In scaldic poetry the word *dís* means goddess. The *dísir* were objects of worship and their feast was celebrated at winter- nights. In fact the feasts of the *dísir*, the elves and the other fertility deities all seem to have taken place at "about the same time." Freyia herself is called *Vanadís*, that is, *dís* of the Vanir, the Scandinavian chthonic, fertility deities (Turville-Petre 1964, 221-226, 231), which may mean she was understood as their ancestor and guardian [Note 7].

One of the parallels to *Beowulf* in Germanic literature can be found in the Icelandic saga of Orm, son of Storolf, the *OrmsÞáttr Stórólfssonar*. In an episode which is seen as related to the English poem, Orm fights to the death in a cave a she monster and her son. The incident gives dramatic evidence of the ferocity of Germanic warrior females. But the story is also of interest because of the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

presence of a megalith, a great stone ("*bjarginu*," Chambers 1967, 188) which seemed too big for any man to move, blocking the hero's entrance to the cave.

I am not aware of anything about Grendel's Mother which so pointedly associates her with the Neolithic as the *bjarg* in the *OrmsÞáttr*. But her decided connection with snakes is suggestive of the *dísir* who, in *Krakumál*, for example, use poisonous snakes to dispatch Ragnar Loðbrók to the afterlife (Chadwick 1899, 10; for other literary contexts, Chadwick 1959; for iconography, Levy 1982, 105; Ringtved 1986, 148; Shetelig and Falk 1978, 207). "Many of the family of snakes," *wyrmcynnes fela* (l. 1425), were found at Grendel's Mother's mere, and the sword hanging in her underwater hall is *wyrmfāh* (l. 1698), "snake-ornamented."

Gefion 5. Line 1690

Social institutions – matrilineal tribes – and part of the belief system – female guardian spirits – of Goddess religion appear to have been maligned in the part of *Beowulf* examined so far. When next Gefion's name may be seen, the challengers of Hrothgar and Heorot have been vanquished and the poem consolidates Beowulf's physical victory by attacking the Goddess on the level of ideas. Her champions destroyed, Gefion herself seems to be pictured as not worthy of sympathy. The sword brought back from the mere evokes the criticism:

Hrōðgar maðelode –
ealde lāfe,
fyrngewinnes,
Gifen gēotende
frēcne gefērdon;
ēcean Dryhtne;
Þurh wæteres wylm
hylt scēawode,
on ðæm wæs ōr writen
syðÞan flōd ofslōh,
gīgante cyn; [Note 8]
Þaet wæs fremde Þēod
him Þæs endelēan
Waldend sealde
(11. 1687-1693).

Hrothgar spoke – looked at the hilt
old remnant, on which was the beginning written
of ancient strife, when a flood slew
Gefion gushing, the race of giants;

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

> they suffered terribly; that was a people foreign
> to the eternal Leader; to them for that a final payment
> through water's whelm, the Wielder gave.

Gefion's flood may be said to have wiped out the giants. Two criticisms of the Goddess would seem to be involved. She is painted as (1) originating conflict on earth; and (2) having been treacherous to her followers, if the giants can be so understood.

The first of these assertions is peculiar: a primeval flood is represented as an original act of aggression, the first great adversity seen on earth. Gefion performed the first genocide, eliminating a race of human-like creatures. The charge perplexes even more when we realize that it flies in the face of the character of the Earth Goddess recorded in Tacitus. The Roman historian said that during Nerthus' holiday the tribes who worshipped her: "make no war, take no arms; every weapon is put away; peace and quiet are then and then alone known and loved" – "*Non bella ineunt, non arma sumunt; clausum omne ferrum; pax et quies tunc tantum nota, tunc tantum amata*" (*Germania* 40). Thus a reinterpretation of the Goddess appears to be advanced in *Beowulf*. What are we to make of the poem's assertion that, uncharacteristically warlike, she was the initiator of strife on earth?

Probably an important clue is that she acts against the giants. This passage has traditionally been seen as a reference to Christian mythology [Note 9]. But part of the plausibility of seeing Gefion in the poem is that it brings into perspective the giants of Northern legend.

These are often found in close relation to the earth deities (Motz 1982, 75-76). In the excerpt from *Ynglinga Saga* quoted earlier Gefion bore four sons to a giant, enabling her to plow Zealand, her homeland, into existence. After a war among the gods, Niorð, by then male, married the giantess Skaði, a relationship which is paralleled by Freyia's brother Frey mating with the giantess Gerð (Turville-Petre 1964, 165). Various crises in Asgarð, the male-ruled pantheon of late Scandinavian mythology, were caused by the desire of a number of giants (Hrungnir, Thrym, etc.) for Freyia. Although only one episode of "unseemly behavior" by Freyia is recorded, there are hints even in the late texts that she may have encouraged such attentions (Ellis

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Davidson 1964, 115). In light of their inclusion with giants among the *untȳdras* of line 111, it may be significant that she was also accused of sexual intercourse with *elves* (Turville-Petre 1964, 130; dwarves 141). Furthermore, "a close link between the giant people of the deep and those who dwelt in the depths of the earth" has been noticed, with the suggestion even being made that Aegir, the sea god, "should perhaps be among the giants rather than the gods" (Ellis Davidson 1964, 130-131). I sketched above (note 3) a comparison between his nine daughters and the *niceras* killed by Beowulf.

The association of giants with large stones has already been cited as a link between them and the Neolithic. More telling is the nomenclature in which folklore has fused with archaeology. The six hundred Neolithic passage graves of Denmark are known as *jættestuer*, translated "Giants Tombs" in the work of P.V. Glob (1967, 87). Presumably the immense size of these tombs is responsible for the title, as it has been for the North German folk practice of calling Neolithic passage graves, as at Wienberg in Schleswig, "giants' beds" (Schutz 1983, 94, 101). The architecture may have given rise to the belief that giants had dwelt on earth during the Neolithic period.

In light of the possibility that Northern European society was made up of matrilineal tribes in the Neolithic, two indications that females had special significance in the identity of Scandinavian giants deserve attention. Various sources report a forceful circumstance: the river which divided the world of men from the world of giants was swollen by, or perhaps comprised of, the urine or menstrual blood of giantesses. Less emphatically, in a history of Norway attributed to Thor in the tenth century, female members of a race of giants were the inhabitants against whom Thor contended to make the country safe for men (Turvillle-Petre 1964, 78-80, 90-91).

We may believe that the original Germanic audience of *Beowulf* understood giants as the followers or at least allies of Gefion. Her rendering them extinct was thus an act of great treachery. The effect of this passage would therefore have been to spread confusion in the mind of anyone who still believed in the female earth deity.

We need not, and perhaps should not see the Biblical story of Noah as the original referent of the flood described here. Marine transgressions as a result of deteriorating climate are a well attested feature of the geology of northern Europe in the millennium from

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

500 B.C. to 500 A.D. "Around 500 B.C. Denmark registered a 2°C drop in temperature.... By 300 B.C. inundations along the shores of the North and Baltic Seas and a rise in the ground water level had brought about a reduction of inhabitable land at a time when the area appears to have experienced an increase in the population" (Schutz 1983, 241; Iverson 1973, 106; Kristiansen 1978, 180; but Jensen 1982, 196-197). The "free peasant society" of the Chauci, described earlier, underwent a reorganization which introduced hierarchy among them early in the second century A.D. Pressure of the advancing sea was clearly a factor in the changes. An extensively excavated Chauci settlement north of Bremerhaven about which these conclusions have been reached had to be abandoned in the fifth century A.D. as a result of the incursion of the North Sea: "The increased salinity of the low-lying areas deprived the villagers of their drinking water, turned the meadows into salt marshes and in the end forced the inhabitants to give up their way of life" (Schutz 1983, 320-321). In *Social and Religious Organization in Bronze Age Denmark*, Janet Levy has described the beginning of this climatic shift in terms which are suggestive here: "The possible agricultural failures related to a major climatic change ... would have led to a loss of faith in ... fertility rituals" (110) [Note 10]. A crisis of faith in the Germanic earth deity seems precisely what the fifth Gefion passage of *Beowulf* was designed to evoke.

The religious and social changes this paper has focused on possibly occurred first in the North among the Cimbri. So consideration is warranted of their own tradition, recorded by Strabo, that a hostile sea had forced them to leave their lands: "they were driven out of their habitations by a great flood tide" – μεγάλη πλημμυρίδι ἐξελαθεῖεν ἐκ τῶν τόπων [*Geography*, 7.2.1]. It may well be that a complaint against the female earth deity as the originator of strife had been part of the cult of Othin for hundreds of years before being recorded in *Beowulf* line 1690.

The similarity to the story of Eve may not be the result of literary borrowing.

ENDNOTES

1. This view has been challenged by an ambitious work in which Alexander

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Murray mainly contends against a theory of continental scholars that patrilineal clans existed in Germanic prehistory (Murray 1983). He believes that early Germanic kinship was bilateral and did not entail clan organizations, and thus he argues as well against "the British school of matrilinealists." Murray does not consider what contribution the evident matrilineal kingship of the Picts, lasting until 842 A.D. (Anderson 1973), may have made to the "remarkable vitality of the matrilineal viewpoint among British historians." Murray's study has been thought by a reviewer to "dismiss inconvenient evidence with undue rapidity" (Charles-Edwards 1986), and the point is well taken.

Chadwick is said to have "denied" that "the tribe was an aggregate of clans, that the clan was intimately bound up with the village, and formed within the tribe what we can call a political or judicial unit" (26). But in fact Chadwick's words were: "We need not hesitate to believe that the tribe itself was made up of a number of local communities under chiefs of their own, each of whom probably possessed a stockaded village where he practiced *blót* [sacrifice] and administered justice under his sacred tree" (1907. p. 323). Whether village heads were "really chiefs of clans" Chadwick had not sufficient evidence to say, but organizations of kindred seemed to him to have been much more important in the Roman period than they would be later (see Ringtved 1986, 169-201).

Tacitus' statement that village farmland was worked "*ab universis in vices*" ("by everyone in turn") is dismissed by Murray as evidence of only "individual or family ownership" (56), not corporate kin activity [Concerning constant modification of Danish and German field boundaries, see Liversage 1980, 127 and Schutz 1983, 322]. Tacitus' observation that "neither chance nor casual grouping makes the squadron or the wedge, but family and kinship" (*Germania* 7) is seen as "not a description of military organization *at all*" by Murray (55, my italics), whose translation of *propinquitates* as "friends" does not accord with *propinqui* in chapter 13.

Murray states that "a certain amount of rhetoric" (60) inflated Tacitus's report that a maternal uncle's relation to sister's son was more important among some of the Germans than father's to son; but his grounds are unlikely, namely that Tacitus's description was colored by Herodotos' and Polybius' accounts of other peoples. Chadwick had found the displacement of the king of the Quadi by two sons of his sister worthy of special attention because it is "the only case of succession to a Suebic kingdom of which we know in early times," and he judged that "the further we go back in native tradition the more prominent become the traces of [a matrilineal] system (1907, 331-334). Murray's "particular interest" in this Quadi event was limited to "the fact that maternal relationship was no bar to the accession" (62).

Even in Murray's view matrilineal descent groups may have existed in Germanic prehistory ["optative features," 64], but he dismisses such matters as "conjectural."

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

2. Nora Chadwick has pointed usefully in this direction (1959, 200, 186), although overemphasizing eastern Baltic associations of the monsters.

3. The nine sea beasts may be compared with the nine "maidens of mighty strength, dwelling beneath the sea... familiar in both Scandinavian and Irish traditions" and "linked with the giantesses of the underworld who play an important part in Norse mythology" (Ellis Davidson 1964, 175). The god Heimdall, son of these nine mothers, is in some ways an early male version of Freyia. Like her, he is of the Vanir, the fertility gods; his name is the counterpart of "*Mardǫll*," which expresses her relation to the sea; and he sometimes took the form of a seal – suggesting relationship between his family and the *nicereas* of *Beowulf* (Ellis Davidson 1964, 172-176; Turville-Petre 1964, 147-155). The god of the sea who is the father of Heimdall's mothers is the other deity which Grimm associated with the name Gefion (1968, 193, 198). Heimdall has been likened to the Irish deity "Manannan mac Lir in that he is closely associated with the sea... and above all he is a begetter of children" (Chadwick 1958, 112). Nine mothers of a single son are also known in Irish legend (Ellis Davidson 1964, 130-131). In both Norse and Irish mythology, such figures may reflect a marriage tradition, elaborately associated with Manannan mac Lir in the West (Chadwick 1958, 109), of sacral kingship for the consort of the goddess.

4. Wolves live among the condemned in a poem whose hero is named after one – an irony not lost on environmentalist Barry Lopez (1978, 141, 208). The fate of the species, perhaps foreshadowed in Beowulf's killing of nine sea beasts, may likewise be anticipated in the summary slaying of a water creature from Grendel's Mother's lake by a Geatish bowman (1. 1432f).

5. Lines 1259 and 1352; Three times of Wealtheow, 11. 620, 1168, 1649; Twice of Hildeburh, 11. 1075, 1117; Once of ModÞrȳðo. 1. 1941.

6. The "feline nature" of the she-monster of the episode of *OrmsÞáttr Stórólfssonar* which is compared to *Beowulf* has been said to "lack tangible parallels in Icelandic Saga" (Puhvel 1979, 19n7). But a term used in the *OrmsÞáttr* for the she-monster, *ketta*, "she-cat," is exactly the word used for the female monster in some versions of the *Grettis Saga* episode which is related to Beowulf's fight with Grendel's Mother (Cf. Chambers 1967, 186 with 189n2). Moreover, Norse mythology describes the Goddess Freyia as having a feline aspect. Her legendary chariot was drawn by cats; "for this reason she might be called 'owners of cats' (*eigandi fressa*)" (Turville-Petre 1964, 176). Furthermore, gloves of catskin were worn by leaders of the ritual known as *seiðr* which Freyia was said to have originated (Ellis Davidson 1964, 117-120). The she-monster of *Ormsþáttr* was also likened to an ox (Puhvel 1979, 18n7), another beast elaborately associated with Freyia (Turville-Petre 1964, 256) as with Gefion (*Ynglinga Saga*, above).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

7. This analysis bears on issues raised by Murray. Other signs of ancestor worship in Germanic and Scandinavian tradition are not lacking (Chadwick 1907, 339-340; Philpotts 1913, 272-273; Hempel 1966; Brate 1911-12; Turville-Petre 1963; Bennike and Ebbesen 1986). These can only be understood as pointing to the persistence of a monolineal kinship system. For ancestor worship cannot be sustained in a society where the kinship group is constituted bilaterally (Philpotts, 1913, 272). In Renfrew's schema the descent groups attached to tombs may have been patrilineal or matrilineal (he did not speculate), but the kinship system was monolineal.

8. Semicolon follows Wrenn 1973.

9. Whitelock 1951, 5-7. Crucial to her argument, the obscurity of *Christian* references to giants requires a late date for composition of the poem.

10. Levy's assumption that differences in female sumptuary goods reflect the ranking of husbands and fathers – despite the slight variation in male sumptuary sets (79) – makes some of her conclusions about an "elite" questionable.

References

Anderson, Marjorie
1973 *Kings and Kingship in Early Scotland*. Edinburgh: Scottish Academic Press.

Battaglia, Frank
1990 "The Matriliny of the Picts." *Mankind Quarterly*. 31: 17-43.

Bennike, Pia and Klaus Ebbesen
1986 "The Bog Find from Sigersdal: Human Sacrifice in the Early Neolithic." *Journal of Danish Archaeology* 5: 85-104.

Brate, Erik
1911-12 *"Disen." Zeitschrift für deutsche Wortforschung*. 13: 143-152.

Brown, Arthur and Peter Foote, eds.
1963 *Early English and Norse Studies*. London: Methuen.

Byrne, Francis J.
1973 *Irish Kings and High Kings*. London: Batsford.

Chadwick, H.M.
1899 *The Cult of Othin*. London: Clay.
1907 *The Origin of the English Nation*. Cambridge UP.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Chadwick, Nora K.
1958 "Pictish and Celtic Marriage in Early Literary Tradition." *Scottish Gaelic Studies*. VIII: 56-115.
1959 "The Monsters and *Beowulf*." *The Anglo-Saxons*. Ed. Peter Clemoes. London: Bowes & Bowes. 171-203.
Chambers, R.W.
1967 Beowulf, *An Introduction*. 3rd ed. Cambridge UP.
Charles-Edwards, T.M.
1986 Rev. of *Germanic Kinship Structure*, by Alexander C. Murray. *English Historical Review*. 101: 465-466.
Childe, V. Gordon
1964 *The Dawn of European Civilization*. NY: Random House.
Crawford, O.G.S.
1957 *The Eye Goddess*. London: Phoenix House.
de Vries, Jan
1956-1957 *Altgermanische Religionsgeschichte*. 2 vols. Berlin: Gruyter.
Dillon, Myles
1946 *The Cycles of the Kings*. London: Oxford University Press.
Ellis Davidson, H.R.
1964 *Gods and Myths of Northern Europe*. Baltimore: Penguin.
1967 *Paqan Scandinavia*. London: Thames and Hudson.
Garmonsway, G.N. and Jacqueline Simpson
1968 Beowulf *and Its Analogues*. N.Y.: Dutton.
Gimbutas, Marija
1989 *The Language of the Goddess*. London: Thames and Hudson.
Glob, P.V.
1967 *Denmark: An Archaeological History from the Stone Age to the Vikings*. Trans. Joan Bulman. Ithaca: Cornell UP.
1969 *The Bog People*. Trans. Rupert Bruce-Mitford. Ithaca: Cornell University Press.
Gough, Kathleen
1961 "Variation in Matrilineal Systems." *Matrilineal Kinship*. Eds. David M. Schneider and Kathleen Gough. Berkeley: University of California Press. 443-653.
Green, Miranda
1986 *The Gods of the Celts*. Totowa, NJ: Barnes and Noble.
Grimm, Jakob
1968 *Deutsche Mythologie*. Einleitung: Leopold Kretzenbacher. 3 Vol. Graz, Austria: Akademische Druck.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Hald, Kr.
1963 "The Cult of Othin in Danish Place Names." Brown and Foote. 99-109.
Hedeager, Lotte
1987 "Empire, frontier and the barbarian hinterland: Rome and northern Europe from AD 1-400." *Centre and Periphery in the Ancient World*. Eds. Michael Rowlands, Mogens Larsen and Kristian Kristiansen. Cambridge UP. 125-140.
Hedeager, Lotte and Kristian Kristiansen
1981 *"Bendstrup – en fyrstegrav fra ældre romersk jernalder, dens sociale og historiske miljø."* With Eng. summary: Bendstrup – A Princely Grave from the Early Roman Iron Age: Its Social and Historical Context. *KUML*. 81-164.
Hempel, Heinrich
1966 "Matronenkult und germanische Mütterglaube." *Kleine Schriften*. Heidelberg: Winter. 13-37.
Iversen, Johs
1973 *The Development of Denmark's Nature Since the Last Glacial*. Trans. Michael Robson. København: Reitzels Forlag.
Jażdżewski, Konrad
1973 "The Relations Between Kujavian Barrows in Poland and Megalithic Tombs in Northern Germany, Denmark and Western European Countries." Eds. Glyn Daniel and Poul Kjærum. *Megalithic Graves and Ritual*. København: Jutland Archaeological Society. 63-74.
Jensen, Jørgen
1982 *The Prehistory of Denmark*. NY: Methuen.
Kaelas, Lili
1983 "Megaliths of the Funnel Beaker Culture in Germany and Scandinavia." *The Megalithic Monuments of Western Europe*. Ed. Colin Renfrew. London: Thames and Hudson. 77-91.
Klaeber, Friedrich
1950 *Beowulf and the Fight at Finnsburg*. 3rd Ed. Boston: Heath.
Kristiansen, Kristian
1978 "The Consumption of Wealth in Bronze Age Denmark." Eds. Kristian Kristiansen and Carsten Paludan-Müller. *New Directions in Scandinavian Archaeology*. National Museum of Denmark. 158-190.
Lauring, Palle
1958 *Land of the Tollund Man, The Prehistory and Archaeology of*

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Denmark. Trans. Reginald Spink. New York: Macmillan.

Levy, Janet E.

1982 *Social and Religious Organization in Bronze Age Denmark*. Oxford: BAR International Series 124.

Liversage, David

1980 *Material and Interpretation: The Archaeology of Sjaelland in the Early Roman Iron Age*. Copenhagen: National Museum.

1982 "An uncompleted fortification on Sejero." *Journal of Danish Archaeology*. 1: 87-93.

Lopez, Barry

1978 *Of Wolves and Men*. NY: Scribners.

Mac Cana, Proinsias

1955-6, 1958 "Aspects of the Theme of King and Goddess in Irish Literature." *Études Celtiques*. 7: 76-114 and 356-413; 8: 59-65.

Markey, T.L.

1987 "Morning, Evening, and the Twilight Between." *Proto-Indo-European: The Archaeology of a Linguistic Problem*. Eds. Susan N. Skomal and Edgar Polomé. Wash., DC: Inst. for Study of Man. 299-321.

Motz, Lotte

1982 "Giants in Folklore and Mythology: A New Approach." *Folklore*. 93: 70-84.

Murray, Alexander C.

1983 *Germanic Kinship Structure*. Toronto: Pontifical Institute.

Olrik, Axel

1910 "Gefion." *Danske Studier*: 7: 1-31.

Olrik, Axel and Lee M. Hollander

1919 *The Heroic Legends of Denmark*. NY: Amer. Scan. Foundation.

Philpotts, Bertha S.

1913 *Kindred and Clan in the Middle Ages and After*. Cambridge University Press.

Puhvel, Martin

1979 Beowulf *and Celtic Tradition*. Waterloo, ON: Wilfrid Laurier University Press.

Renfrew, Colin

1973 *Before Civilization*. London: Jonathan Cape.

Ringtved, Jytte

1986 *"Jyske gravfund fra yngre romertid og ældre germanertid. Tendenser i samfundsudviklingen."* With Eng. summary: Late Roman and

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

early Germanic Iron Age grave finds from Jutland. Tendencies in social development. *KUML*. 95-231.

Ross, Margaret C.

1978 "The myth of Gefjon and Gylfi and its function in *Snorra Edda* and *Heimskringla*." *Arkiv för Nordisk Filologi*. 93: 149-165.

Saxo Grammaticus

1859 *Historia Danica*. Eds. Petrus E. Muller and Joannes M. Velschow. Vol. 1. Lipsiae. 3 vols. 1858-1859.

Schutz, Herbert

1983 *The Prehistory of Germanic Europe*. New Haven: Yale UP.

Shetelig, Haakon and Hjalmar Falk

1978 *Scandinavian Archaeology*. Trans. by E.V. Gordon. NY: Hacker.

Smyser, H.M.

1965 "Ibn Fadlān's Account of the Rūs with Some Commentary and Some Allusions to *Beowulf*." *Franciplegius*. Eds. Jess B. Bessinger, Jr. and Robert P. Creed. NY: NYUP. 92-119.

Snorri Sturluson

1907 *Edda*. Ed. Finnur Jonsson. Reykjavík: Kristjánsson.

1932 *Heimskringla or The Lives of the Norse Kings*. Ed. Erling Monsen and trans. with A.H. Smith. NY: Appleton.

1966 *Heimskringla – Nóregs Konunga Sǫgur*. Ed. Finnur Jonsson. Oslo: Universitetforlaget.

Strabo

1924 *Geography*. Ed. and trans. by H.L. Jones. Cambridge: Harvard University Press.

Swanton, M.J.

1982 *Crisis and Development in Germanic Society 700 - 800*: Beowulf *and the Burden of Kingship*. Göppingen: Kümmerle Verlag.

Tacitus

1914 *Germania*. Ed. and trans. by Maurice Hutton. *Dialogus*, *Agricola*, *Germania*. Eds. Maurice Hutton and Sir William Peterson. Cambridge: Harvard University Press. 255-333.

Thompson, E.A.

1965 *The Early Germans*. Oxford: Clarendon.

Turville-Petre, E.O.G.

1963 "A Note on the *Landdísir*." Brown and Foote. 196-201.

1964 *Myth and Religion of the North*. NY: Holt.

1969 "Fertility of Beast and Soil in Old Norse Literature." *Old Norse Literature and Mythology*. Ed. Edgar C. Polomé. Austin: University of Texas Press. 245-264.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

1972 *Nine Norse Studies*. London: University College.
Whitelock, Dorothy
1951 *The Audience of* Beowulf. Oxford: Clarendon.
Wrenn, C.L.
1973 *Beowulf*. Rev. by W.F. Holton. London: Harrap.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

NOW AVAILABLE IN PAPERBACK

Proto-Indo-European: The Archaeology of a Linguistic Problem Studies in Honor of Marija Gimbutas

Edited by Susan Nacev Skomal and Edgar C. Polomé

A. Richard Diebold, Jr. – Linguistic Ways to Prehistory
Winfred P. Lehmann – Linguistic and Archaeological Data for Handbooks of Proto-Languages
János Nemeskéri and László Szathmáry – The Anthropological Evaluation of the IE Problem
Nikolai Ja. Merpert – Ethnocultural Change in the Balkans in the Eneolithic
Sándor Bökönyi – Horses and Sheep in the Copper and Bronze Ages
Homer L. Thomas – The Indo-Europeans – Some Historical and Theoretical Considerations
János Makkay – The Linear Pottery and the Early Indo-Europeans
Eric P. Hamp – The Pig in Ancient Northern Europe
Ralph M. Rowlett – Grave Wealth in the Horodenka Group
Christopher Hawkes – Archaeologists and Indo-Europeanists: Can They Mate?
Edgar C. Polomé – Who are the Germanic People?
Gregory Nagy – The IE Heritage of Tribal Organization: Evidence from the Greek *polis*
Bruce Lincoln – On the Scythian Royal Burials
Calvert Watkins – Linguistic and Archaeological Light on Some Homeric Formulas
T.L. Markey – Morning, Evening, and the Twilight Between
Wolfgang P. Schmidt – 'Indo-European' – 'Old European'
Colin Renfrew – Old Europe or Ancient Near East? Clay Cylinders of Sitagroi
Edgar C. Polomé – Marija Gimbutas, A Biographical Sketch

Paperback, 400 pages with maps and illustrations
Price: $50.00 (Only $25.00 to Private MQ subscribers)
VISA AND MASTERCARD ACCEPTED
ISBN 0-941694-29-1

Institute for the Study of Man
1133 13th St., N.W., Suite C-2, Washington, D.C. 20005
Tel: (202) 371-2700 Fax: (202) 371-1523

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

BOOK REVIEW ARTICLE

Tracing the Genetic History of Modern Man: A Review

Edward M. Miller
University of New Orleans

The History and Geography of Human Genes
Cavalli-Sforza, L.L., P. Menozzi, and A. Piazza
Princeton: Princeton University Press. 1994

Cavalli-Sforza, Menozzi, & Piazza's new publication *The History and Geography of Human Genes* (1994) is a very impressive compilation of what is known about the geography and history of human genes. Pending further research it will be a definitive work of racial analysis (although the authors would not describe it this way). The data are presented in many useful formats including tables, maps, dendrograms, and principal component diagrams. About half of the book (the second half) constitutes an atlas showing of the distribution of a large number of genes for each of the continents, and for the whole world. The extensive atlas section is probably what makes the book so expensive ($175 as advertised), and will unfortunately limit its distribution to libraries and those few individuals working in this field for whom it will be indispensable. It might have been better if the publishers had brought it out in two volumes: one the atlas, and the other the text. This would have made it less unwieldy for the reader to handle.

There is also an extensive set of tables giving information on allele frequencies for many genes and populations. This data base is compiled from examining 2900 articles from 136 journals (although only 777 involved unduplicated data, listed in the references). It is the mapping and interpretation of this massive amount of data that makes the book so valuable. Unfortunately, the data compilation is already somewhat obsolete as it only goes to 1986 (p. 25).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The book is organized on a geographical basis, with one introductory chapter, one chapter on the worldwide distribution of genes, and then separate chapters on Africa, Asia, Europe, "Greater Australia" (Australia, New Guinea, and the Pacific Islands), and the Americas. The introductory chapter is a valuable compilation of material about genes, anthropology, archeology, human evolution, and the methods of quantitative genetics. The authors recognize that the book will be used by people who are not experts in all these fields. The introductory material is useful to those lacking training in one or more of the fields. The specialist will probably learn little from the sections on his own specialty. A brief section on the "Scientific Failure of the Concept of Human Races" attempts to divert criticism for even studying the subject of how gene frequencies differ across the world (although it probably does reflect the author's true beliefs). Much of the book seems to contradict the anti-race assertions in this section, but it is an effective argument against the most naive ideas of race.

The last half of the first chapter contains useful discussions of such subjects as the problem of identifying populations, and some of the methods that will be used in the rest of the book. Greater detail and an effort to put the methods into simpler language would have been useful for the general reader.

The second chapter summarizes the data on the worldwide distribution of genes. The basic theoretical framework in this book is that gene frequencies are determined by drift. Offspring randomly inherit genes from their parents. The child has a 50% chance of inheriting any given gene from each parent. Many who are not used to thinking in genetic terms think that any trait affected by the genes must be rigidly inherited from the parents. In actuality, because of the random inheritance of genes, genetics provides a theory of human diversity, and helps explain why siblings are usually quite different (Rowe 1994). In small and somewhat isolated populations, such as humans are believed to have lived in during prehistoric times, gene frequencies change appreciably, but randomly, from generation to generation. Over many generations (perhaps 100,000 years) different populations develop different gene frequencies.

As mentioned, one contribution of the book is the extensive

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

table of gene frequencies. The worldwide section is based on data for 120 alleles from 42 populations (although data was not available for all alleles for all populations). A certain amount of averaging of data from different sources was needed to get the relevant gene frequencies, and the data are often for national groups in Europe (such as the English or Danes), and groups of tribes or regions in other parts of the world. However, after combining different populations, there are more data than can be easily comprehended. In this respect the maps are helpfully situated at the back of the book as they permit the reader to get a quick overview of how any allele is distributed.

The Tables of Genetic Distances

A method for simplifying the data is to calculate measures of genetic distance. One of the interesting features of the book is the numerous genetic distance matrices it includes, permitting one to see how closely various populations are related. Before various statistical adjustments, these are the sum of the squares of the differences in frequencies averaged over the various genes. Under a random drift model the distance should be roughly proportional to the time since populations divided, assuming the populations did not differ in size and the genes were not subject to appreciable selection. Distances are usually calculated as F_{st} distance, although Modified Nei's distances are given for the worldwide sample of 42 populations. The F_{st} measure would be 0 if all available gene frequencies were equal, and 1 if they were all completely different (i.e. if every member of one population always had one allele, every member of the other population would lack it.)

These measures of genetic distance are of some interest in their own right. In general one would not expect large differences in frequencies for a particular gene between two populations, if for most genes there is only a small difference in frequencies between the two populations. For instance, anyone arguing that the French and the Germans differed for genetic reasons, would have to contend with the evidence presented here that these two populations are genetically very similar.

The use of genetic distance permits summarizing the worldwide data in a single triangular 42 by 41 matrix. The largest difference in the table appears to be 4573 between the Mbuti Pygmies and the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Australian aborigines. In tables the numbers are multiplied by 10,000 for convenience in presentation. Thus, the Pygmies appear to have 45.73% of their polymorphic genes different from the Australians. It appears that for all pairs of human populations, the majority of the genes will be in common, even if one picks genes whose alleles differ among individuals. Of course, there is a much larger number of genes that appear to have no known variation among humans.

Most of the data is for genes that are either neutral, or close to neutral. In particular, none of the genes discussed are known to affect such genetically controlled characteristics as skin color, hair color, eye color, nose shape, or size. All of these characteristics are known to differ greatly between populations. Likewise, none of the studied genes are known to directly affect such socially important traits as intelligence, criminality, etc (although many such traits are now known to exhibit genetic variability, see Eaves, Eysenck, & Martin, 1989; Herrnstein & Murray, 1994; Miller, 1994a,b; Rowe 1994; Rushton, 1994).

The data for the English, which is a population many Americans trace their origins to, can be used to illustrate the overall nature of the data. In the worldwide sample of 42 populations, the population closest to the English is the Danish (21), and the one most distant is the Mbuti Pygmies of Zaire (2373). The distance between the English and the Bantu is 2288. For purposes of comparison, the genetic distances between the English and the Japanese is 1244; between them and the South Chinese, 1152; and between them and North American Indians, only 947. Estimates of standard errors are provided by the bootstrap method. These estimates indicate that it is unlikely that studying additional neutral genes will change the conclusions that the English have different gene frequencies than these populations.

The genetic distances between the English and other European populations are small. The two greatest distances are 404 for the Lapps and 340 for the Sardinians, two populations that contributed few immigrants to the United States. With major European populations, it is a mere 22 with the Germans, 24 with the French, 51 with the Italians, and 204 with the Greeks. In comparison with the much larger genetic distances from the Bantu and West Africans, or the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Japanese, South Chinese, or American Indians, the European populations do indeed seem similar to each other. Unless the genes that affect various types of behavior have a frequency difference radically different from the studied genes, genetic differences in behavior between European populations should be small.

Likewise, the various West African populations are similar to one another. The average distance between the various West African tribes is 157, and 211 among the Bantu groups (p. 184). A representative Bantu-to-West African distance is 188 (p. 175).

Given the large genetic distances between Europeans and (sub-Saharan) Africans, and the similarities within the populations that American slaves and immigrants were drawn from, it does seem reasonable to divide most of the immigrants to America from Africa and Europe into one of the two conventional groups: Blacks and Caucasians. It is also logical to believe that large genetic differences still exist between the two races. Because the two original groupings differ greatly in skin color, it is to be expected that skin color will be linked to the probability of carrying certain genes, even if population differences in frequency are due only to drift (which is the working assumption for the genes discussed in this book). If the alleles have been subject to climate related selection, as has been argued to be true for intelligence and many aspect of behavior (Lynn, 1991; Miller 1991, 1994; Rushton, 1994), the genetic differences are likely to be larger. Although some would like to argue that knowledge of race is of no use in estimating the probability of someone having a particular trait, a rather simple application of Bayes Theorem shows otherwise. Bayesian statistics show that the posterior estimate should be a weighted average of the information about a particular individual and the mean for the race he is a member of, with the weights depending on the relative precision of the information about the individual and the group (Miller 1994c).

Trees of Human Descent

A matrix of genetic distances contains too much data to be readily understood. The data are further presented as dendrograms, referred to as "trees" in the book. Thus, in this section, and in the remainder of the book there is extensive presentation of trees. The populations that are on the same branches are more closely related

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

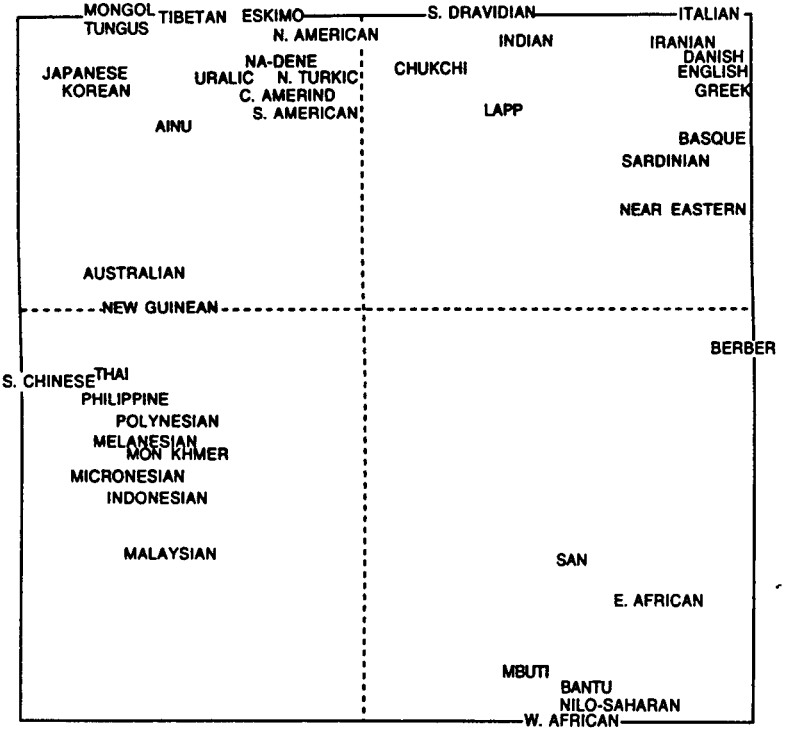
(as shown by the table of genetic distances). Trees are generally interpreted as having been created by the original human population having divided and subdivided. A rough calibration is attempted from the estimated times of the settlement of Australia, the Americas, and the movement of modern humans out of Africa. The length of the branches leading to the junction points are portrayed as the relative time since the populations separated. This is not always true, since gene frequencies are more strongly affected by drift in small populations, and gene flow between populations can reduce this dissimilarity even if they had evolved quite separately over many nillennia.

The African-Versus-All-Other Splits is Primary

A key presentation of the authors' results (p. 78) shows trees of 42 populations using frequencies for 120 genes, with genetic distances calculated by two different methods. In both of them, the first split separates African populations from non-African populations. Experiments with bootstrap methods (sampling with replacement from the available data pool to discover how sensitive the conclusions are to changes in the set of genes examined) show that the core African populations (Bantu, Nilo-Saharans, West Africans, and Mbuti Pygmy) group together 83 and 84 times out of a hundred, showing that minor variation in genes studied is unlikely to change the conclusions. When the 42 populations were grouped into nine clusters, Africans versus non-Africans was the first division, and this was true for 98% of the bootstraps (p. 80).

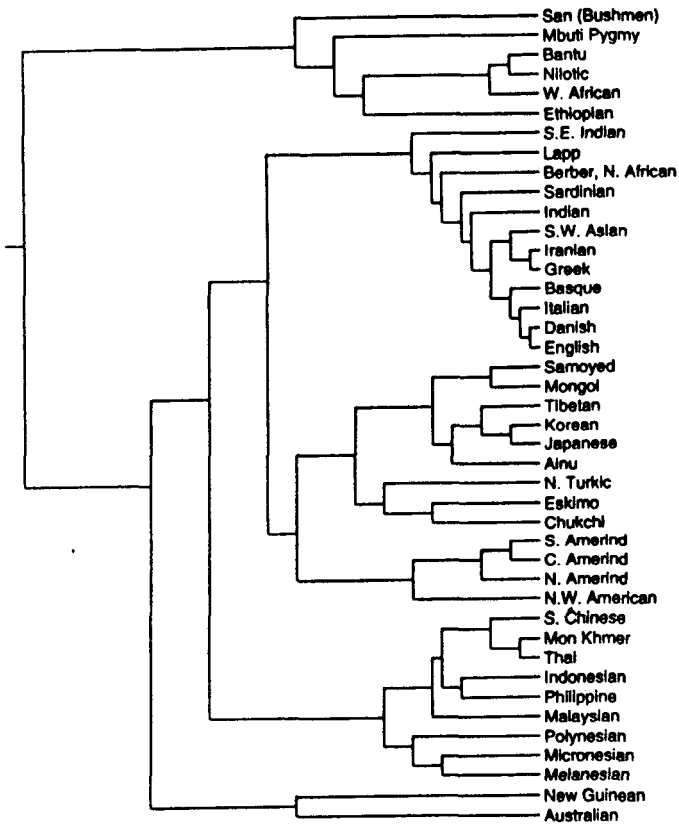
It may be noted that this represents a change from the first results published earlier (Edwards & Cavalli-Sforza, 1964, discussed by Cavalli-Sforza et al., 1994, p. 68), which put the first split between a Caucasoid/Negroid grouping and all others. The gene frequency data available then showed the Caucasoids to be more like the Negroids than the Mongoloids. The shift by the Cavalli-Sforza group from grouping the Mongoloids with the Negroids (which would be consistent with modern humans originating in Asia, followed by a branch moving westward, and then subdividing into groups that passed into Africa and into Europe) is explained by the much larger number of loci that are available now, rather than any major methodological difference.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



Principal component map of 42 populations based on selected genetic markers (Courtesy of Princeton University Press). African populations cluster in the lower right quadrangle, Caucasoids in the upper right (Berbers have long been classified as Caucasoids slightly admixed with other African populations). Southern Chinese and other southeast Asian populations are traditionally believed to represent Mongoloid populations admixed with earlier indigenous Australoid-type (c.f. Australian and New Guinean), and possibly Negrito-type, aboriginal populations, and fall into the lower left quadrangle, as do Pacific islanders. "Classical" Mongoloids (North Chinese, Koreans and Japanese) fall into the upper left quadrangle. Contemporary gene frequency analysis thus reveals patterns which closely resemble those based on the system of race-grouping developed by Carleton Coon and traditional physical anthropologists, although Cavelli-Sforza et al. do not explicitly make this conclusion.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED



Genetic Linkage tree of 42 Populations on the basis of 120 allele frequencies (Courtesy Princeton University Press)

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Incidentally, although Cavalli-Sforza et al. here use the terminology of Africans, Europeans, and Asians, it is clear from the populations included in each group that what they really mean is Caucasoids, Negroids, and Mongoloids. They refer to taking three populations from each continent (p. 68), but the tree (p. 68) shows only two populations from the continent of Europe (the English and the Lapps). The South Turkish were one of the sampled populations, appearing on the same branch as the English. The South Turkish are actually located in Asia (i.e. they are Asian), although they are Caucasoids closely resembling other European populations in gene frequencies. Accuracy and clarity would be improved if the standard scientific racial terms, Caucasoids, Negroids, and Mongoloids, were used, instead of appropriating the well-established terms traditionally applied to those from particular continents, Europeans, Africans since the North Africans are genetically totally different from the sub-Saharan (Negroid) Africans, Asians, and giving these terms new and unusual meanings. Incidentally, in later pages the book uses the term Caucasian (Fig. 4.10.1 on p. 225) to mean someone from the Caucasus mountains, an accurate usage, but one that can create confusion for an unwary reader when looking at single trees.

There seems to be a general agreement emerging that the first split in the tree of human descent is between Africans and all others. This has been shown by several different methods. As noted, it is what would be expected if modern humans originated in Africa, then moved into the Middle East, and only later divided into other populations.

Nei & Roychoudhury (1993), using 26 populations with the same genes for all populations and a different methodology (neighbor joining) than the Cavalli-Sforza group, found that the first split was between Africans and non-Africans, a result that was confirmed in 500 bootstrap replications. The split is again African versus non-African using the same 26 populations, but a different tree building method (unweighted pair group method with arithmetic mean). In a test with 15 populations but with more loci (33 loci and 131 alleles), their first split was again between Africans and non-Africans.

Nei & Livshits (1989), by examining only the three major groups of sub-Saharan Africans (mainly from Nigeria and Cameroon), Europeans (mainly Great Britain), and Asians (mainly Japanese),

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

were able to examine 186 loci, which gave enough data for tests of statistical significance. They found that the distance that separates the Africans from the Europeans was statistically significantly greater than that between Europeans and Asians, even though geographically Great Britain is closer to Nigeria and Cameroon than to Japan.

Mountain, Lin, Bowcock, & Cavalli-Sforza (1993) show a tree resulting from using 80 DNA markers on eight populations. The first split is between Africans and non-Africans. The tree of Zhao and Lee (1989) agrees that the largest genetic difference is between Africans and all other populations.

A study of a restriction enzyme haplotype close to the b-globin gene showed "all non-African populations share a limited number of common haplotypes, whereas Africans have predominantly a different haplotype not found in other populations. A genetic distance analysis based on these nuclear DNA polymorphisms indicated a major division of human populations into an African and an Eurasian group" (Wainscoat, Hill, Thein, Flint, Chapman, Weatherall, Clegg and Higgs, 1989, p. 34).

Torroni, Semino, Scozzari, Sirugo, Spedini, Abbas, Fellous and Santachiara Benerecetti (1990) reported a sharp distinction between Africans and Italians using markers on the *Y* chromosome. Hammer (1994) has reported a *Y* chromosome marker (which implies inheritance only from males) which had a frequency of .74 in 611 Africans, but only .07 in 192 Europeans. A tree showed that the first split was again African versus non-African (although the Egyptians grouped with the Africans).

Similar conclusions have been reached by other workers using other genetic markers. Relethford and Harpending (1994) show that a tree constructed using craniometric variation has the first split between Africans and all-others.

It is a commonplace in evolutionary psychology and sociobiology that the human psychology (and body) was shaped by the extremely long period in which people were foragers, and that we are probably adopted for reproductive success in what is often called the environment of evolutionary adaptation. However, a little thought will show that these environments varied in different parts of the world and ranged from tropical to the cold of Ice Age Eurasia.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The author of this article has argued elsewhere (Miller 1994a, b) that in tropical areas vegetable food was available year around. It has become a common generalization that in hunter-gather societies most of the calories come from gathering and that most of the gathering is done by women, and that the total number of hours expended is low (Lee, 1968). However, examination of the societies used to establish this generalization shows that they were typically tropical societies. In such tropical areas, the females can gather enough food to support themselves and their children. The optimal male strategy is to devote efforts to mating with as many females as possible, and preventing other males from mating with the women he is mated to. Provisioning females and their children is not as strongly selected for (since they will survive in any case).

In Eurasia, the major problem is surviving through the winter when fruits, berries, insects, eggs, and hibernating and migratory animals are unavailable. The common solutions are storage of food (which leads to selection for the ability to defer gratification and for intelligence, see Miller 1991), and the hunting of large animals, such as deer. Unfortunately, women are not effective hunters of large animals (just imagine trying to hunt while carrying a crying baby). Thus, males became the primary supporters of their families during the winters. Females are then selected to attract males who will provision them and their children. Males are selected to form strong pair bonds and to have the personality traits that lead to provisioning.

The ancestors of the Negroids were tropical Africans associated with the areas of the food rich rain forests, and the ancestors of the Mongoloids and Caucasoids were from the cold climate regions of Eurasia. Furthermore, to explain the stronger pair bonds of Mongoloids and other attributes it is necessary to argue they evolved in colder climates. Their stockier build and other features are consistent with this.

That Negroids evolved in tropical Africa, and that Caucasoids and Mongoloids evolved in cold Eurasia is readily accepted. However, some have found it harder to believe that the environment Caucasoids evolved in was appreciably warmer than that for the Mongoloids, especially since there has been extensive publicity given to accounts of Ice Age Europe. It was definitely very cold. Its inhabitants hunted such animals as reindeer and mammoths.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Other Splits in the Tree

While the first split in the tree is clear and appears to be well established, the second split is a little surprising. With the preferred set of distance measurements (Fst), the non-Africans split into Australians, and all others, and then into Southeast Asians, and the remainder. Only then do the Caucasoids separate from the Northeast Asians, Arctic Asians, and American Indians. Using an alternative method for calculating genetic distances, Nei distances, the non-Africans first split into an Australian, and Southeast Asian group, and a Caucasoid, other Asians, and American group. Then the Caucasoids split from the Northeast Asians, Arctic Asians, and Americans. Combining the 42 populations into nine clusters (which increases the number of loci that can be used and reduces the importance of random drift), the non-Africans are then split into a group combining the Australians, Southeast Asians, and Pacific Islanders and into a group including the Caucasoids, Northeast Asians, and Americans.

The results here are significant since the Northeast Asians (including Japanese, Koreans, northern Chinese) and American Indians are found to be relatively close to the geographically distant Caucasoids, rather than to the Southeast Asians, who are geographically much closer. This is presumably to be accounted for by the archaeologically documented contacts and migrations between East and West Eurasia along the connecting belt of steppeland. Interestingly, detailed inspection of the trees and the distance matrices shows that the Southeastern Chinese (i.e. Hong Kong and vicinity) group with Southeast Asians such as the Filipinos, rather than with the Northern Chinese.

Such an outcome is not impossible. One could imagine the early Middle Eastern population giving birth to groups that moved eastward into Southern and Southeast Asia, mingling with older populations of which the Australoids and Negritoes are remote survivals today. Similarly the West Eurasian population might have given birth to groups that moved eastward along the steppes to mingle with the ancestors of the Northern Chinese and the Bronze Age invaders of Japan who established themselves as a ruling class over the indigenous Jomon population.

The authors conduct bootstrap experiments (which in essence

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

repeat the calculations with different sets of genes to see how sensitive the conclusions are to the particular set of genes for which we have data). The conclusions do appear to change depending on the set of genes studied, and the authors suggest that one cannot be confident of the exact order of separation between the branches leading to the Caucasoids, the Northeast Asians, the Southeast Asians, and the Australian and New Guinea populations. They attribute much of the uncertainty to extensive gene flow between Northeast Asia and Southeast Asia, which makes it hard to produce a tree that fits the data well.

The chief alternative to the extensive calculations undertaken by the Cavalli-Sforza group is another set of calculations done by Nei & Roychoudhury (1993). As already mentioned, these calculations agree that the first split is African versus non-African. However, they place the second split between the Caucasoids and the Greater Asians (Australians, Mongoloids, Americans). The trees they produce correspond very closely to the races as they have been traditionally understood, with their tree grouping populations into groups that are easily recognized as Negroids, Caucasoids, Mongoloids, Amerindian, and Australians. About the only difference from traditional races is that the branch of the tree that includes the Mongoloids also includes the Australians and New Guinea groups. However, these are on a separate branch. Nei & Roychoudhury discuss why they get a somewhat different tree than Cavalli-Sforza et al. and conclude it is because they use a different method for building trees, neighbor joining, while Cavalli-Sforza et al. use an average linkage method. Nei & Roychoudhury present some cogent reasons for preferring their methods.

Most of the interpretation of the data by Cavalli-Sforza et al. is one of genetic drift, (i.e. the random changes in gene frequencies that occur from one generation to another). The implicit assumption is that population mixing has played little role. However, they do recognize that the theory that observed differences in gene frequencies are due to drift is, at least in principle, testable. For instance, if there is no mixture after separation, all populations that are descended from the same parent population should have approximately the same genetic distances from the various populations descended from another parent population (see table on p. 90). This condition need

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

not be met where there is appreciable gene flow between populations. In general we would expect adjacent populations to exchange genes, and to be more similar than non-adjacent populations.

Subject to these considerations, certain methods of tree construction produce trees the length of whose branches from the point of origin indicates how much genetic separation has occurred since the populations separated. If the populations are evolving at the same rate, all the branches from a common point should have the same length. Very often this condition is not met. The authors make it quite clear that the validity of phylogenetic trees as an indication of the length of separation of the populations studied relies on the assumption not only of a constant rate of mutation, but also on the further assumption that the size of the two populations remains approximately the same on the average, and that the genetic exchange resulting from migration is so slight as to be unimportant. Unfortunately, at various times in various places it is apparent that these conditions are not met.

Perhaps the most striking exception to the predicted pattern is that the branch leading to Europeans is often relatively short. One of the most interesting studies discussed in the book is one that analyzed only a small number of populations (including Chinese, Europeans, two populations of African pygmies, and Melanesians), but collected data on a vary large number of alleles. A tree constructed using this data showed a very short branch leading to the Europeans (p. 91). On the basis of this the authors consider a hypothesis which would require the Europeans to be descended from an admixture of the Oriental and Negroid races, something that paleontological data simply does not support. An alternative hypothesis which they do not consider is that in prehistoric and historic times there have been substantial migrations of Caucasoids into Asia and Africa, and of the mixed descendants of these migrants into areas even more remote from Western Eurasia.

The evidence that European gene frequencies tend to be intermediate between Africans and Chinese, though closer to the Chinese than to the Africans of sub-Saharan Africa, is interesting to those who have researched the behavioral differences between races. Rushton (1994) has presented evidence that on a wide range of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

characteristics, including intelligence and sexual behavior, the races are ordered Mongoloid, Caucasoid, Negroid. He interprets this as evidence for his differential *K* theory, while the author of this paper interprets this same pattern as evidence for his paternal investment theory (Miller, 1994a,b). Both have interpreted the fact that so many characteristics had the same pattern as a systematic regularity that called for explanation. It was most easily explained by an evolutionary mechanism, probably taking the form of a common climate-related factor producing differences such that the Africans were at the tropical end (or the variable and unpredictable end in Rushton's theory) and Mongoloids at the other end (cold in Miller's account or predictable in Rushton's) with Caucasoids in between.

How might European gene frequencies come to be between Chinese and African? Part of the explanation is simply geographical. The Caucasoids are located between the territory of the Negroids and the Mongoloids, and prehistory suggests that they contributed genes to both groups, as well as receiving genes from the Mongoloids. The term Caucasoid is used instead of European because it is those who live in the Middle East who are most likely to have exchanged genes with the Africans and Mongoloids, and those who live in Central and Southern Asia with the Mongoloids.

However, a theory of Ammerman & Cavalli-Sforza (1973), discussed in this book (p. 108), provides a further argument as to how modern Europeans could come to be intermediate in gene frequencies. They argue on the basis of archeological evidence and gradients of gene frequencies in Europe that in relatively modern times agriculture, after emerging in the Middle East, spread into Southeast Europe by demic diffusion. By demic diffusion is meant that the early farming populations expanded gradually with each new generation moving further into the new territories and possibly mixing with the prior inhabitants. The alternative to this account is that the technique of farming diffused without substantial movements of peoples.

The authors advance a tempting but no established theory of early human migration of cultivators to explain gene frequency distributions by the demic diffusion of agriculture. The authors compute first principal components for European gene frequencies. For those not familiar with statistics, the first principal component is a single statistic which condenses as much information as possible

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

about the gene frequencies into a single number. When plotted on a map, the component increases systematically with distance from the Middle East. This is explained by the gradual advance of a Middle Eastern farming population into Southeastern Europe. Its gene frequencies were different from that of the Mesolithic population of Europe. Whenever two populations are in contact there is some interbreeding, and genes from the original European populations gradually diffuse into the advancing farming population. It is a fascinating hypothesis, and the use of principal components to support it is ingenious. Many individual genes are distributed as if they had been imported by a population advancing into Europe from the Middle East, with the wave gradually becoming less obvious as the intruding population mixes with the original inhabitants of Europe.

Such an account agrees with what we know about primitive agriculturalists and foragers. Foraging populations are typically very low density, while farming can support much higher densities. Furthermore, a shift to agriculture can plausibly increase the population growth rate, permitting densities to rise rapidly. One of the limitations on population growth in migratory foraging societies is the mother's inability to carry more than one baby at a time. This prevents her from having the next child (or from permitting it to survive) until the first can walk. Thus, births are spaced about four years apart.

In sedentary farming populations births can be more frequent, permitting the population to grow, at least when there is adequate fertile land for expansion. As the population grows, villages every so often become too large and split, with one group leaving to establish a new village. This new village would have been frequently located in a new unsettled area.

Settled farming is a way of life that is quite different from foraging, and one that is in many ways physically harder. Evidence from contemporary foragers shows that they are reluctant to adopt agriculture and a settled way of life as long as foraging provides an adequate income. Foragers and settled farmers appear to have lived in the vicinity of each other for long periods of time without the foragers taking up agriculture. It also appears that while there is some

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

gene flow between such populations, they basically stay separate.

Thus the Cavalli-Sforza et al. account of demic diffusion of agriculture is at least plausible. But the demic diffusion model would imply that many of the ancestors of modern Europeans were not primarily Ice Age Europeans, but Neolithic Middle Easterners. The gene frequencies of modern Europeans were shaped not purely by the cold conditions of Ice Age Europe, but also by conditions in a somewhat warmer Middle East. However, Colin Renfrew's theory that the Indo-European languages were introduced into Europe by immigrant farmers from the Middle East (1987) has been widely rejected by Indo-Europeanists (c.f Mallory 1989, Gimbutas 1991). This is relevant since Cavelli-Sforza et al. accept the fact that most modern Europeans speak Indo-European languages.

Other Interesting Worldwide Gene Distributions

After deriving trees of descent, Cavalli-Sforza et al. compare these with the distribution of language families. They conclude that they are similar. This is not surprising since both languages and genes are argued to spread by the repeated splitting of populations, followed by independent evolution of gene frequencies and languages. Also, people tend not to mate with those speaking different languages, and linguistic differences become barriers to gene flows. It should be noted that Nei & Roychoudhury (1993), constructing their trees in a somewhat different manner, found a less close correlation between genetic groups and languages.

Conclusions from Principal Components

Another way the massive amount of data in the table of genetic distances can be condensed is to calculate principal components. In essence, the first principal component is a number which summarizes as much information about gene frequencies as possible. After this is done, a second component can be calculated which summarizes as much as possible of the remaining information and so on. Principal components do not always exist. If the frequency of one allele was completely independent of the frequencies of other alleles, principal components would not exist to be calculated. Principal components are used in other fields. For instance, in psychology the first principal component from a battery of tests is traditionally called *g* (for general

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ability), and is usually what the psychometrician means by intelligence.

The first two principal components explained 27% and 16% of the variance respectively (p. 81). Thus there is a high degree of patterning in the distribution of gene frequencies. A graphics technique places the populations on a two dimensional diagram with the first principal component along the base, and the second on the vertical axis. As the authors note, the African populations are in the lower right hand quadrant, and all of the Caucasoid ones are in the upper right hand quadrant. The ones traditionally called Mongoloids are in the left hand side of the diagram, along with the Australian and New Guinean ones. It appears that modern gene frequency data, when analyzed with modern sophisticated statistical methods, produces something that looks very much like the traditional concept of races. The chief exception is that the Australia and New Guinea populations are in the middle of the left hand side, with populations traditionally considered Mongoloid both above and below. As in their preferred trees (trees and principal component diagrams are merely different ways of simplifying and presenting visually the same information), the Mongoloids seem to fall into a group at the upper left hand corner (including the Japanese, Koreans, Mongols, Ainu, and American Indian groups), and then in the lower left hand quadrant another group including South Chinese, Thai, Indonesians, Malaysians, Filipinos etc.).

As an aside, the reader may note that the second principal component seems to divide populations somewhat by the climatic area in which they are found with the Negroids, South Asians, Australians, New Guineans being at the bottom of the diagram, and the Caucasoids, Northeast Asians, and American Indians groups being at the top. It is possible that the genes that play a large role in determining the second component are ones that are subject to natural selection that is somehow related to climate (possibly through the effects of tropical diseases).

The reader may notice that certain populations that have contributed heavily to the populating of America are close together on the chart. In the upper right hand corner, the Italian, Danish, English, Greeks, (and Iranians) are very close together. Reference to

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

such as the Germans, French, Dutch, that helped populate America the chapter on Europe shows that most other European populations, are very similar to the populations plotted here.

In the lower left-hand corner, the Bantu and West African populations come out to be very similar. The European group and the African group are almost as far apart in the second component as it is possible to be. While the studied gene frequencies do not affect the appearance of individuals, it is plausible that if they did, the difference between the Europeans and Africans would be immediately apparent, and that words would emerge to describe them. Of course, these two population are sharply separated in skin color and other aspects of appearance (due to other genes), and it is not surprising to find that this difference in appearance has been noticed. People of the two original continents are referred to as white and blacks, Afro-Americans and Euro-Americans, Caucasians and Negroes etc. The second principal component does a good job of separating the two groups of peoples.

There are populations that lie between the two above-described clusters. The North African Berbers are about half way between Europeans and Negroes on the second principal component, while the San and East Africans much closer to other Africans. It is very plausible that these groups located in Africa reflect differing degrees of Caucasoid admixture with African stock. This possibility with regard to the San is discussed in the African chapter. Since these groups contributed relatively little to the populating of America, an impression of a sharper distinction among those of unmixed ancestry than actually exists in the Old World could be created.

One might ask what principal component maps can indicate. The authors argue that when two populations intermingle, all gene frequencies are shifted proportionately in the same direction. As an illustration (not discussed in the book), consider the problem of estimating the percentage of Caucasian intermixture in the African-American population. Consider one gene. The Duffy is a good one, and one that has been classically used. This gene is very frequent in Caucasians but virtually unknown in West African Negroes. The percentage of this gene in an African-American population could be, and has been used, to estimate the percentage of Caucasoid intermixture. If a fifth of the ancestors of the Negroid population were

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Caucasoids, the frequency of the Duffy gene would be one fifth as high as in Caucasoids. Thus, from one gene, admixture could be estimated. More generally when two parent populations are mixed, the gene frequencies will be $w1f1 + (1-w1)f2$, where w is the percentage of the daughter population that the first population contributed, and $f1$ and $f2$ are the respective gene frequencies. Gene frequencies are always being subjected to random changes (drift) and the effects of selection. Thus, one will get slightly different answers depending on the genes studied. The obvious solution is to examine many genes and take an average. Once one had the frequencies of admixture, one could plot them on a map. The first principal component would give a good depiction of the percentage of the invading population in the old. This method would work even if one did not know the populations being mixed. As mentioned, Cavalli-Sforza et al. make good use of a first principal component map of Europe to argue that the observed pattern can be explained by varying mixtures of two populations, an original foraging one, and an expanding Middle Eastern farming one.

Now suppose that one had three populations. One might first compute the gene frequencies to be expected in each of the populations that were mixtures of the first two. The differences between the frequency that could be explained by the mixture of the first two populations, and that observed, might be attributed to mixture from the third. Since the second principal component is constructed to only use information not in the first principal component, its values should indicate the extent of admixture with the third population.

Cavalli-Sforza et al. claim to have conducted simulations which show that the effects of expansions of ancient populations will indeed leave evidence on the principal component maps. Notice that there need be no written evidence of an expansion of the original population, nor does the name of that population, or its gene frequencies have to be known.

In several cases the principal component maps consist of roughly concentric circles, which can be interpreted as indicating mixing with surrounding populations of an original population that underwent a prehistoric expansion. In the discussion, they draw attention to some of the patterns and speculate about what populations might have

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

expanded.

The expansion out of the Middle East with the coming of agriculture is an example that has been discussed. They interpret a pattern of concentric circles around the Sea of Japan as possibly indicating an expansion from that area, possibly of a people similar to that of the prehistoric Jomon culture in Japan (p. 249). Similar maps for Italy are interpreted as possibly providing evidence of the diffusion of the genes of the original Etruscans, who may have come to have a distinctive pattern of gene frequencies through either drift in a small original population, or by immigration to Italy from another area (p. 279).

The book provides principal component maps for the first few principal components both on a worldwide basis and in each separate continental chapter. Cavalli-Sforza et al. have devised an effective and ingenious mechanism for combining the data provided by the principal components into color maps (used earlier in Menozzi, Piazza, & Cavalli-Sforza, 1978). The human eye can distinguish three primary colors, and by using a separate primary color for each of the first principal components, a map can be prepared which shows the first three components, (which appear to explain about half of the total variance in gene frequencies). The result is some very interesting color maps.

Race

This may be a good place to comment on the views of the authors on race. In the first chapter there is a discussion of "The Scientific Failure of the Concept of Human Races" (p. 19). This opens with the statement that "The classification into races has proven to be a futile exercise for reasons that were already clear to Darwin." The reference is presumably to Darwin's knowledge that the races grade into one another, making easy distinctions impossible.

As part of their disclaimer the authors make the point that the measured genetic variability within populations is greater than the variability between populations, though even this is to be questioned, since some characteristics, including even specific genetic markers, such as blood groups, are found solely in specific races, and not in others. The inclusion of these brief comments in the opening section of the book, seem to be motivated by political more than scientific

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

reason, and is defensible only on semantic grounds as to the precise definition of "race." The authors also fail to point out that none of the traditionally studied genes relate to such variables as skin color, or nose shape – genetic variables that show great variation between populations. It is very likely that many of the genes affecting the visible traits have gone to fixation in many populations (judging from the absence of dark skin in Swedes, and the absence of non-albino lightly pigmented individuals among the Liberians, or prognathousness among paleo-Negroids as opposed to the absence of prognathousness among Europeans and North Chinese).

In this brief "disclaimer" section, the authors seek to dispose of popular stereotypes (p. 19) by declaring that "the major stereotypes, all based on skin color, hair color and form, and facial traits, reflect superficial differences that are not confirmed by deeper analysis with more reliable genetic traits. . ." Yet the contents of the rest of the book serve to contradict this statement. It has already been pointed out how the trees were calculated, and that the principal component diagrams classify populations in such a way that groups corresponding to races can readily be recognized. The maps portraying genetic distribution, including even the map used to illustrate the cover, clearly reflect the genetic disparity between the populations of broad geographical areas, which largely parallel the "superficial" visual markers associated with traditional stereotypes regarding race. Thus on the cover map itself, to demonstrate areas of major genetic difference, Australia has been colored red; sub-Saharan Africa as yellow; northwest Europe as green; China, Japan, Korea as purple; and the New World as various shades of purple. Each of the regions corresponds to what are traditionally considered races.

Of course, the map does show intergradations between the major populations. Carleton Coon wrote clearly about "genetic clines," differentiating between those which had arisen in the course of evolution as a result of graduated differences in local selective forces and those which had arisen where widely different human populations had been brought into contact with each other, usually as a result of the technologically more advanced expanding into areas occupied by less advanced populations, with a resultant genetic admixture. The concept of race as a sub-species implies that such gradations will be

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

found, since if the populations could not interbreed they would be classified as different species, not merely different races. Other maps in the book confirm the existence of races. The map of the first principal component in Africa shows a sharp north to south gradient (p. 191). The contour lines are closer together in the Sahara. A quick glance shows that Africa can be divided into a North African area where live peoples traditionally classified along with other Caucasoids, and sub-Saharan Africa occupied by peoples traditionally called Negroes, with smaller pockets of pygmies and Capoids. The map shows a zone in the Sahara where the gene frequencies are intermediate, which may be explained historically by the migration of Caucasoid Arabs and Berbers into the area, and their subsequent admixture with Negroes. The actual genetic data for this zone is weak, since only a few Saharan groups have been studied (the Tuareg are the most important). The maps are marked with the data points used. Very frequently the data points are for the coast of North Africa, and for points south of the Sahara. In roughly the same way as weather maps are drawn, the computer then fills in the missing lines with zones of smooth transition.

Another very interesting first principal component map is for Asia (p. 250). For this continent the first principal component explains 35.1% of the total variance. The lines run very roughly north south with the extreme values in the Middle East, and in the Far East including Japan, China, and Vietnam. A line running between Burma and India corresponds closely with the traditional Mongoloid/Caucasoid division. It bends to include Tibet in the Mongoloid area, and then proceeds north. As the authors note, the highest values for the Caucasoid pole are not adjacent to Europe, but in the Arabian Peninsula, suggesting a possible gene flow out of that area.

In the far north of Eurasia (where the data is scarce), the Mongoloid line appears to reach almost to the Urals, although there is evidence of considerable mixing in the grasslands stretching across Eurasia as populations have moved back and forth. A widely debated question has been the nature of the Lapps, an Arctic European group speaking a language similar to that spoken in the Urals. The trees show that the Lapps group with other Europeans. Their gene frequencies could be approximated by a mixture of 52.5% Caucasians with the remainder Mongoloid, although another method shows more

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

European mixture (p. 273). The best guess is that this group migrated into Scandinavia from nearer the Urals, bringing a Mongoloid pattern of gene frequencies with them, and then gradually interbred with other Scandinavians, until their gene frequencies acquired the general European pattern. The Finns, another group that speaks a Uralic language are estimated to be have 90% European genes with 10% Uralic, while the Hungarians (also speaking an Uralic language) similarly appear to have a 10% non-European, Central Asian mixture (p. 273).

The maps also indicate various small groups that have retained a high degree of genetic separation from the major population groups. The complexity of a mountainous area such as New Guinea is striking, indicating the relative genetic exclusivity of small human populations at earlier stages of technological and advancement.

Diseases and Gene Frequencies

The worldwide discussion finishes with a section that goes gene by gene, with commentary on the distributions. The details will be mainly of value to those interested in a particular gene. This may be a good place to discuss whether the genes studied are truly as neutral as the theory underlying the book assumes.

The measured distances between populations may be reduced if the genes in question have been subjected to frequency-dependent selection. Frequency-dependent selection occurs when the less common gene has an advantage. A very important example of frequency dependent selection occurs with parasites and infectious diseases. The body's defenses again foreign organisms depend on identifying them as foreign, which is done by the nature of the proteins on the surface of cells. Genetically, this is controlled by the human leukocyte antigen system, or *HLA* system. There are several loci, two of which, the *A* and *B*, are very well studied in different populations. Each of these loci has numerous alleles. The frequency of each loci is treated as a different "gene" in this book. Thus a large part of the data base deals with these loci. "The most important system of markers in our collection, *HLA*, is represented by 12 alleles and 17 *B* alleles." (p. 130)

While the population genetics of the *HLA* system are not very

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

well understood, there is probably a degree of stabilizing selection. Otherwise, the observed variability would not have survived (Takahata, 1993). Parasites and disease organisms evolve to have proteins that mimic those in the body. The immune system of an individual who has HLA genes that are relatively rare will find it easier to recognize foreign organisms. If any one *HLA* allele becomes relatively common, the diseases that attack the carriers of that allele become more common (Jones, 1992, Table on p. 287). The death rate among carriers of that allele increases, reducing the frequency of the allele. Other alleles have an advantage because their body can better recognize the most common pathogens. This mechanism is believed to be what has encouraged the high degree of genetic diversity that characterizes the *HLA* system. Many alleles found in humans are also found in non-human mammalian species as different as the mouse. (For a readable introduction to the role of parasites in evolution see Ridley, 1994. For a more technical discussion of the human HLA system see Klein, 1990).

There is a brief discussion of known associations with disease, but it is very likely that there are other associations that are not known, including some with diseases which were once important but which are no longer important.

Another very important gene system is the *ABO*, which is vital in typing blood for transfusions. Because of the medical need for blood typing, the *ABO* system it has been very well studied, and data are available for virtually all populations. Certain blood types are known to be more vulnerable to certain diseases, probably because the body can more readily recognize certain invading organisms. For instance, *O* individuals seem relatively resistant to syphilis (p. 126). This may explain why virtually all American Indians (except for Eskimos and some northern Amerind groups) are type *O*. The first Spaniards who followed Columbus to the New World are traditionally reputed to have brought syphilis back to the Old World from America. Individuals with type *A* are more vulnerable to smallpox. Tuberculosis (pulmonary) is believed to be more virulent in *A* individuals than in *O* or *B*. Malaria shows a preference for *A* individuals. Thus, it appears that balancing selection may exist for the *ABO* blood group.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The frequencies of other genes are also believed to be affected by diseases. The Duffy *O* allele (very high frequency in Africans) confers resistance to a particular malarial parasite, Plasmodium vivax. A number of the *G6PD* variants produce resistance to malaria. The immunoglobin genes *GM* and *KM*, which produce antibodies and play an important role in defense against pathogens, could very well be subject to stabilizing selection. The secretory system *FUT2(SE)*, which brings into "secretions substance responsible *for A, B*, and the related H substances that are normally found on the red cells of individuals and define their *ABO* status" (p. 133), is known to affect vulnerability to ulcers, with secretors less vulnerable.

As the brief discussion above shows, many of the widely studied genetic systems that are the subject of this book appear likely to be subject to stabilizing selection (the frequency-dependent selection referred to above), such that rare alleles have a reproductive advantage. This would tend to reduce genetic differences between the world's peoples. The effect is probably not enough to make the assumption of neutrality, which underlies much of this book's theory, inapplicable. However, the reader should keep in mind that some gene systems may be subject to stabilizing selection, and others to disruptive selection, and some perhaps to both. A system can be subject to both if allele frequencies tend to a particular equilibrium value under certain conditions, but this equilibrium frequency depends on location. Climatic or cultural differences could make the equilibrium gene frequencies depend on location. Important examples are for malaria, where in malarial areas there is a high equilibrium frequency for alleles giving resistance to malaria, and a zero equilibrium frequency in malarial regions. A useful discussion of the distribution of the genes believed to protect against malaria is provided (p. 146-149), although these genes are not used in calculating genetic distances, since their genes reflect selection more than drift.

Incidentally, awareness that many of the easily studied genes appear subject to stabilizing selection is important in evaluating a commonly made argument. It is frequently asserted that only 6.3% of the genetic variation is between races, with the rest being between populations (8.3%) or between individuals within populations 85.4% (Lewontin, 1972). While it is probably true that most of the genetic

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

variability is between individuals, the popular statements do misrepresent the scientific research. A correct statement might be 6.3% of the measurable gene frequencies variation is between races. Lewontin's work (cited on p. 19) dealt with the genes that could be measured at the time he wrote (many fewer than can now be measured). None of these genes affected skin color, nose shape, body build, size, etc. to mention characteristics that differ between races. We can be fairly sure that the genes that were studied (or could be studied given the knowledge then available) were not a random sample of all genes. It appears they overemphasized the genes that were relevant to the body's defenses against disease, and which were subject to stabilizing selection. If this is so, the importance of racial differences is understated.

The Regional Chapters

The remainder of the book is organized in the same way as the Worldwide chapter, except that each chapter focuses on a continental area, and more populations are discussed within each chapter than the few from each continent that were included in the study of 42 populations. Each chapter starts off with a good review of the prehistory of the region, and a history of population movements up to 1500 AD. These are useful to non-specialists, but probably contain little that is not known to the regional specialists.

A distance matrix is then calculated for the selected populations, and used to produce a tree showing the estimated lines of descent. This is then discussed, with emphasis on various interesting issues, such as the origin of particular populations. Principal components are calculated and discussed. Individual genes are then discussed.

For the chapters on Asia and on Europe, there is a third level. Asia is discussed region by region, (Arctic, Northeast Asia, Southeast Asia, the Indian subcontinent, Central Asia, and West Asia). In Europe, selected regions are given a similar detailed treatment (Italy, France, the Iberian Peninsula, Sardinia), with maps of principal components being presented.

Asia

The major surprise to this reader was in the Asian chapter. There is a tendency to think of the third of the human race that is

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Chinese as a homogeneous population. The analysis shows large differences between North China and South China. In a tree with 39 Asian populations (p. 225), the first split puts South Chinese with other Southeast Asian populations, such as the Philippine, Malaysian, Thai, and Indonesian, with the Thai and Viet Muong being the closest. In contrast North China groups with Korea, Japan, and Tibet, as might be expected. However, this group is actually shown as being closer to such groups as the Turkish, Lebanese, and Iranians, traditionally considered as Caucasoid. This fits with the historical presumption that the Han Chinese originated in Northern China, where they were in contact with Caucasoids from neighboring Central Asia, and only later expanded into southern China, where the aboriginal population is believed to have had links with other racial groups whose genes still strongly color the populations of the various southeast Asian territories.

A possible explanation is that agriculture emerged twice in China, once in north China for millet, and once in south China, and that these populations then expanded, freezing their gene frequencies. The dividing line is placed between the Yangtse and the Yellow River. Supporting evidence is provided by an analysis of a stratified sample of about 540,000 Chinese surnames from the 1982 Census, which shows a pattern which is argued to be roughly similar to the three Neolithic Cultural areas.

The importance of this finding of a relatively large difference between the North and South Chinese is that much research is done on American or Canadian born Chinese (Vernon, 1982), which are predominantly of South Chinese descent, coming from Hong Kong, Canton, or their vicinity. It may be risky to generalize from this to the whole of Han China.

For those interested in behavior and economic development, the resemblance between South Chinese and the Filipinos, Malays, etc. presents a problem. The South Chinese generally do well on intelligence and academic tests whether tested in the US or in Hong Kong, often better than that mass of today's population broadly classified as Caucasoid. Filipinos generally don't do as well. Within Malaysia, the Chinese test much better than the Malays. Within Southeast Asia, the overseas Chinese generally do much better

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

economically than the Malays (Sowell 1994). Thus, it is surprising to see the relatively small genetic differences identified to date between the South Chinese and adjacent populations.

Europe

Someone interested in the genetic relationships of various populations will find much of interest in the various chapters on the Continents.

For instance, in inspecting the tree for Europe (p. 268), the Lapps will be found to be the population that is furthest separated from other populations. Next come the Sardinians, which are sufficiently different from other Europeans that their inclusion in the principal components analysis would have required that they be given a component to themselves (p. 291). Their unique gene mix is attributed primarily to genetic drift in a small population. The Basques are found to be another distinct group, who are argued to be a remnant of the pre-Indo-European speaking population of Europe. Iceland is found to be distinct from the rest of Europe, which is again attributed to genetic drift in a small population. None of these small populations made major contributions to the peopling of America.

A very large cluster puts the English, German, Swedish, Italian, Polish, and Russians together (p. 268). Interestingly, the Irish and Scottish are just outside this cluster, even though many think of them as very similar to the English, perhaps because they have been politically united with them. Of course, these are broad contemporary samples, and it is historically well-known that pre-Celtic Ireland and Scotland were inhabited by a somewhat different European population, more akin to the early population of the Mediterranean (and known to old-fashioned anthropologists as "Atlanto-Mediterraneans," prior to the arrival of the Celtic and Germanic peoples. Consequently elements of the Irish and even of the Scottish population reflect the genetic survival of this older, but still European-type, population. Even though there are historic rivalries between such peoples as the French and the Germans, or the Russians and Poles, the data here shows that the genetic differences may be too small to account for much of the differences in national character that some observers claim to see. It is very unlikely that the behaviorally relevant genes could differ much in frequency given the small differences in

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

frequency for the measurable genes. The similarity in gene frequency suggests either that these populations are recently derived from a common population or populations, as historical evidence and the common heritage of Indo-European speech would indicate, or that a high level of intermixture among these various populations. Either of these possibilities would be inconsistent with large differences in the frequency of socially important genes, although it does not make such differences completely impossible.

Africa

A somewhat similar situation is found for Africa. Anthropologists traditionally spend much time on small populations that are interesting, but which account for relatively few people. Thus, the African chapter has sections on the Pygmies, the Khoisan, and the peoples of Ethiopia and the Sahara. However, the bulk of the population of sub-Saharan Africa is composed of either Bantu speakers, or West Africans. The populations within both of these large groups are found to differ little genetically from each other. In the case of the Bantu speakers this is believed to be because they spread from a much smaller population originating from near Cameroon. The linguistic, archaeological, and historical evidence for this movement is expounded on. The historical evidence is mainly relevant to South Africa where history shows that the Bantu moved into the area, displacing the Khoisans at about the same time as the Europeans came in. Similarity in languages and archaeological evidence traces the earlier stages of the movement. The genetic similarities between different groups is consistent with the hypothesized movements, and suggests that there were two streams, one moving south first, and the other east into East Africa, and then South (p. 183-185). Because of this relatively recent Bantu expansion, the various Bantu populations do not differ much from each other genetically.

In West Africa, the various populations differ from each other a little more, but still resemble each other. The authors hypothesize that this similarity may be caused by an expansion out of a single population that first adopted agriculture. An alternative explanation provides for three such original populations, with only the eastern-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

most (the Bantu speakers) being in a position to expand into southern Africa (p. 185). In any case, the Bantu and the West Africans groups do not differ much genetically.

It was pointed out earlier that the major European populations do not differ much from each other either. Most of the United States is composed of descendants of either the major European populations, or the descendants of slaves from either West Africa or Bantu territory. The two groups are quite distinct in gene frequencies and appearance. On the world principal component diagrams, they are at opposite poles for the second principal component (p. 82). Thus, it is not surprising that in America the difference between descendants of Africans and Europeans has been noticed, and led to people being classified into two races, which have been documented to differ in many traits besides appearance (Herrnstein & Murray, 1994; Miller, 1994a,b,c; Rushton, 1994)

As the book shows, there are numerous populations that are intermediate to these populations in gene frequencies, such as North Africans, East Africans, Nilo-Saharan Ethiopians, inhabitants of the Sahara, and North Africans. There are other groups that have a somewhat different pattern of gene frequencies (Pygmies, Khoisans, Sardinians, Icelanders), but none of these groups contributed much to the United States populations. It can be argued that there are clines in the Old World, with gene frequencies changing gradually from North to South (although relatively rapidly across the Sahara). This doesn't alter the fact that the vast majority of the ancestors of the (non-Mongoloid) United States population can be classified as either Caucasoid (European) or Negroid (Bantu or West African). Of course, subsequent mixing has occurred.

Outside of the major populations of Africa there are several minor populations that are of interest. The book is filled with fascinating findings about these populations. The Tuareg, who have always been a very mobile people (p. 173) extend over an area stretching from the northern boundary of the dry Sahara (Algeria and Libya) into the Sahel (p. 171). The authors (p. 173) show that there is a surprising degree of genetic similarity between the Tuareg and the Beja (whose genetic distance from the Tuareg is only 135), a people in the Eastern Sahara whose territory adjoins the Red Sea.

Since every reviewer must find at least one error, it might be

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

noted that the location of the Beja is different on the map on p. 170 than on the one on p. 171 (which is probably the correct one).

The genetic similarity between the Tuareg and Beja is interesting, given the relatively large geographic distance. This suggests shared roots, a common origin, perhaps 5000 years ago. This is a long time, but the minimum east-west migration across the Sahara required for the groups to have a common origin is much greater than the width of the Sahara. Admixture as a result of migrations over tens of thousands of years could greatly reduce or eliminate any genetic differences between populations moving between Caucasoid North Africa and Negroid sub-Saharan Africa. Yet, as the authors document very well, the genetic difference between the Caucasoid inhabitants of North Africa and the Negroid inhabitants directly south in West Africa is quite large (not to mention the obvious differences in skin color and other aspects of appearance). This makes it very likely that the current North African populations did not evolve in their present homelands, since if they had they would not be as different from other Africans as they are.

Thus, the large genetic differences north and south of the Sahara present a problem that is not easily solved merely by noting that there is a low density, dry area in between, since large population movements (carrying with them genes) have undoubtedly occurred. For instance, the movement of slaves from sub-Saharan Africa northwards into Caucasoid North Africa is well-documented (Austen, 1979).

I have developed a theory (Miller, 1994d) that the large genetic difference between the Eurasian populations and the African ones that Cavalli-Sforza et al. document so well is partially due to an early movement out of Africa into Eurasia, allowing modification by selection into the Caucasoids and Mongoloids of today. Later a branch or branches of the Eurasian Caucasoid population moved into north Africa.

There is one large area of Africa whose racial affinity is complex and unclear. This is Ethiopia and adjacent areas. The people tend to have somewhat Caucasoid facial features but dark skins. The gene frequency data suggests that the Amhara (the dominant Ethiopian group) gene frequencies could be achieved by a mixture of 57% Nilotic African genes with 43% of genes from Caucasoids (p. 174). In

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

historic, and probably prehistoric, times the Horn of Africa had close ties with southern Arabia, and may also have been penetrated by migrants from the north travelling up the Nile. Another group that has been the subject of much discussion is the Khoisanid peoples (including the Hottentots, San, !Kung) already mentioned. The San (Bushmen) in southern Africa are a group that physically looks quite different from the Negroids. Baker (1974), and Coon (1965) among others, have argued they are as different from Negroids as Caucasoids are, and should be treated as a separate race from the Negroids. The genetic data reported here shows them to differ more from other sub-Saharan Africans than any of the sub-Saharan groups differ from each other (p. 175), bearing out the view held by earlier physical anthropologists.

Interestingly, the San are closer to Near Eastern populations than the adjacent Bantu populations. Their gene frequencies are consistent with their being 56% Near Eastern, with the remainder African. Given that the territory they currently occupy is distant from Caucasoid territory, this would be puzzling if it were not for evidence that they formerly occupied much of the non-forested savannah lands of eastern Africa. Historic remains and linguistic evidence suggest that they were once were in East Africa, possibly as far north as Nubia. Some mixing with Caucasoids could have occurred then.

The Ethiopian populations, which appear to be a similar Caucasoid-Negroid mix, show a considerable genetic distance from the San, suggesting that if both are a result of mixture, the mixtures occurred at different times.

An alternative hypothesis, that is supported by mitochondrial DNA evidence and the San's distinctive morphology, is that they may be a relic of an early race whose territory once covered much of the African grasslands, and who may have been derived from a branch of early hominids some of whom may have migrated northwards into Eurasia to become Caucasoids and Mongoloids (p. 176). It is interesting to see how modern genetic data supports the earlier idea of Coon that these were a relic of the original populations from which other groups split off as they migrated into new environments (1963, 1965). Here the resemblance with the Near Eastern populations could explained by these populations' having been derived from common ancestors with the San.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Unfortunately, there is little gene frequency data for Madagascar, and this island is frequently left off of the maps due to lack of information. Madagascar is potentially very interesting because the language of the Malagasy is similar to languages from southcentral Borneo. It is generally believed that Madagascar was settled from there by people of Austronesian origin, rather than from nearby Africa (p. 168), whose inhabitants had apparently not yet developed suitable boats, and who only entered the island during colonial times.

The Americas

"The genetic evidence for the Americas fully confirm the three waves of migration suggested by dental and linguistic evidence: Amerinds, Na-Dene, and Eskimo" (p. 349). Of course, much interesting detail is supplied. For instance, the high degree of genetic diversity among South American tribes is attributed to drift in numerous small populations.

Australia, New Guinea, and the Pacific Islands are discussed in the final chapter. The genetic evidence is not particularly definitive for Australia and New Guinea.

The book closes with a call for further research, and for collecting data on various small populations of the world before they disappear. Such an effort is underway as part of the Human Genome project.

Conclusions

For the student of race this book makes several points. One is that there is considerable genetic variability between populations. Human populations differ in much more than skin color. This makes it more plausible that they differ in socially and economically important ways including intelligence, personality, disease resistance, sexual behavior, etc.

While one can argue about the placement of various small groups, there do appear to be three major groups that include very large numbers of people, and whose gene frequencies differ. These are the traditional three groups of Negroids, Caucasoids, and Mongoloids. American Indians and Australians constitute other large groupings with distinctive gene frequencies.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Overall, this is a very valuable book that should be in every university library, although its high cost will keep it out of most private libraries.

References

Ammerman, A. J. & Cavalli-Sforza, L. L. (1973). A population model for the diffusion of early farming in Europe. In *The Explanation of Culture Change*. C. Renfrew ed. pp. 343-357. London: Duckworth.

Austen, R.A. (1979). The trans-Saharan slave trade: A tentative census. In *The Uncommon Market: Essays in the History of the Atlantic Slave Trade*. Gery, H. A. & Hogendorn, J. S. New York: Academic Press.

Baker, J. R. (1974). *Race*. Oxford: Oxford University Press.

Barbujani, G., Pilastro, A., Domenico, S. D., & Renfrew (1994). Genetic variation in North Africa and Eurasia: Neolithic demic diffusion vs. Paleolithic colonization. *American Journal of Physical Anthropology* 95, 137-154.

Bouchard, T. J., Lykken, D. T., McGue, M., Segal, N. L., & Tellegen, A. (1990). Sources of human psychological differences: the Minnesota study of twins reared apart. *Science*, 250, 223-228.

Brues, Alice M. (1990). *People and Races*. (Prospect Heights, Illinois: Waveland Press).

Cavalli-Sforza, L. L., Menozzi, P., & Piazza, A. (1994). *The History and Geography of Human Genes*. Princeton: Princeton University Press.

Clark, J. D. (1993). African and Asian perspectives on modern human origins. in Aitken, J., Stringer, C. B., & Mellars, P. A. Eds. *The Origin of Modern Humans and the Impact of Chronometric Dating.* Princeton: Princeton University Press. pp. 148-178.

Coon, C. S. (1963). *The Origin of Races*. New York: Alfred A. Knopf.

Coon, C. S. (1965). *The Living Races of Man*. New York: Alfred A. Knopf.

Coon, C. S. (1982). *Racial Adaptations*. Chicago: Nelson-Hall.

Eaves, L. J., H. J. Eysenck, & N. G. Martin. (1989). *Genes, Culture, and Personality*. London: Academic Press.

Edwards, A. W. F. & Cavalli-Sforza, L. L. (1964). Reconstruction of evolutionary trees. In *Phonetic and Phylogenetic Classification.* V. E. Heywood and J. McNeill, eds. pp. 67-76. London: The

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Systematic Association.
Gimbutas, Marija, (1990). *The Civilization of the Goddess*. San Francisco, Harper.
Hammer, Michael F. (1994). A recent insertion of an Alu element on the Y chromosome is a useful market for human population studies. *Molecular Biology and Evolution*, 11, 749-762.
Harpending, H. C., (1994). Signature of ancient population growth in a low-resolution mitochondrial DNA mismatch distribution. *Human Biology*, 66, 591-600.
Harpending, H. C., Sherry, S. T., Rogers, A. R. & Stoneking, M. (1993). Genetic structure of ancient human populations. *Current Anthropology* 34, 483-496.
Herrnstein, Richard J. & Murray, Charles (1994). *The Bell Curve: Intelligence and Class Structure in American Life*. New York: The Free Press.
Jones, S. (1992). Natural selection in humans. In *The Cambridge Encyclopedia of Human Evolution*. Jones, S., Martin, R., & Pilbeam, Eds. Cambridge: Cambridge University Press.
Kingdon, Jonathan (1993). *Self-Made Man*. London: Simon & Schuster.
Klein, Jan (1990). *Immunology*. Boston: Blackwell Scientific.
Krantz, G. S. (1980). *Climatic Races and Descent Groups*. North Quincy: Christopher Publishing House.
Laska-Mierzejewska, T. (1982). *Dymorfizm Plclowy Czlowieka Odmiany Bialej I Czarnej Na Kubie*, Warsaw.
Lee, R. B. (1968). What hunters do for a living. In Lee, R. B. & I. DeVore, *Man the Hunter*. Chicago: Aldine, 30-48.
Lewontin, R. C. (1972). The apportionment of human diversity. In *Evolutionary Biology*, Vol. 6, T. H. Dobzhansky, M. K. Hecht, and W. C. Steere, eds. pp.381-398. New York: Appleton Century-Crofts.
Loehlin, J. M. (1992). *Genes and Environment in Personality Development*. Newbury Park: Sage.
Lynn, R., (1991a). Race differences in intelligence: a global perspective, *The Mankind Quarterly*, 32, 254-296.
Lynn, R., (1991b). The evolution of racial differences in intelligence, *The Mankind Quarterly*, 31, 99-121.
Mallory, J. P. (1989) *In Search of the Indo-Europeans: Language, Archaeology and Myth*. London: Thames and Hudson.
Menozzi, P., Piazza, A., & Cavalli-Sforza, L, (1978). Synthetic maps of human gene frequencies in Europeans *Science*, 201, 786-792.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Miller, E. M., (1993). Could r selection account for the African personality and life cycle?, *Personality and Individual Differences* 15, 665-676.

Miller, E. M. (1994a). Paternal provisioning versus mate seeking in human populations, *Personality and Individual Differences*, 17, 227-255.

Miller, E. M. (1994b). Optimal adjustment of mating effort to environmental conditions: A critique of Chisholm's application of life history theory, with comments on race differences in male paternal investment strategies. *The Mankind Quarterly*, XXXIV (Summer) No. 4, 297-316.

Miller, E. M. (1994c). Some implications of Bayes Theorem for personnel selection, *The Journal of Social, Political, and Economic Studies* 19, (Fall) No 3, 323-359.

Nei, M. & Livshits, G. (1989). Genetic relationships of European, Asians, and Africans and the origin of modern Homo sapiens. *Human Heredity*, 39, 276-281.

Nei, M. & Roychoudhury, A. K. (1993). Evolutionary relationships of human populations on a global scale. *Molecular Biology and Evolution*, 10, 927-943.

Pearson, Roger (1991). *Race, Intelligence and Bias in Academe.* Washington: Scott-Townsend.

Relethford, J. H. & Harpending, H. C. (1994). Craniometric variation, genetic theory, and modern human origins. *American Journal of Physical Anthropology*, 95, 249-270.

Ridley, Matt (1994). *The Red Queen*. New York: MacMillan.

Rowe, D. C. (1994). *The Limits of Family Influence: Genes, Experience and Behavior.* (New York: Guilford: 1994).

Rushton, J. P., (1994b). *Race, Evolution and Behavior: A Life History Perspective*. New Brunswick: Transaction Publishers.

Sowell, T. (1994). *Race and Culture: A World View*. New York: Basic Books.

Takahata, N. (1993). Evolutionary genetics of human paleo-populations. In *Mechanisms of Molecular Evolution*. Takahata, N.and Clark, A. G. (ed.) Sunderland, Mass.: Sinauer Associates.

Torroni, A., Semino, O., Scozzari, R., Sirugo, G., Spedini, G., Abbas, N., Fellous, M., & Santachiara Benerecetti, A.S. (1990). Y chromosome DNA polymorphisms in human populations: differences between Caucasoids and Africans detected by 49a and 49f probes.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Annals of Human Genetics, 54, 287-296.
Vernon, P. E. (1982). *The Abilities and Achievements of Oriental in North America.* New York: Academic Press.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

BOOK REVIEW ARTICLE

Evolution and Differences in Human Behavioral Patterns

Jared Taylor[1]
Louisville, Kentucky

Race, Evolution, and Behavior
J. Philippe Rushton,
Transaction Publishers, 1995, 334 pp.

Race, Evolution, and Behavior is one of the most challenging books about race to be published in many years. Not only does it describe the myriad ways in which the living peoples of the world differ, it advances an original explanation for what these differences mean and how they came about which is sure to provoke much discussion. J. Philippe Rushton of the University of Western Ontario has written a stimulating and thought-provoking book that could well become, like John Baker's *Race* and Arthur Jensen's *Bias in Mental Testing,* a classic in its field.

Just how different are the human races? Most experts now take differences in intelligence for granted; but Rushton has gone much farther and marshaled a wealth of data on other differences. The most striking finding is not just that Asians, whites, and blacks are different, but that the differences in many ways fit a pattern, with Asians and blacks at opposite ends of a spectrum, and whites in the middle.

A large part of the book – and a good portion of this article – are devoted to reviewing these data, but Rushton's most provocative and original contribution is his extension of what is called *r-K* reproductive theory to this pattern of Asians-whites-blacks racial

[1] Jared Taylor is the author of *Paved With Good Intentions: The Failure of Race Relations in Contemporary America*, New York: Carroll & Graf, 1992.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

differences.

It is well accepted that different species have evolved different approaches to propagation. At one extreme is the *r*-strategy, by which an organism produces a very large number of offspring, but gives them little or no care. The oyster is a good example. Every year it releases millions of eggs into the ocean and leaves them to the mercies of weather and predators. The majority die, and only a small percentage survive. *r*-organisms must mature quickly because they get no help from their parents. Those that survive repeat the cycle by producing huge numbers of eggs, only a few of which will live. The symbol *r* stands for the maximum rate of increase in a population, and when the conditions for reproduction are good, an *r*-strategist can increase its numbers at a very rapid rate.

At the other extreme is the *K*-strategy, which is used by more advanced animals, including man. The number of offspring is much smaller, but great effort is taken to give each one a good chance of survival. *K*- and *r*-strategists consequently are very different both in biology and in what Rushton calls life histories.

K-strategists live longer, have larger brains, and take longer to reach sexual maturity. Unlike the simpler *r*-strategists, they tend to have some kind of social organization. Besides the care they give their young, adults may share food, cooperate in the hunt, and fight predators together. The *K*-symbol stands for the carrying capacity of the breeding area, and represents the production of small numbers of offspring that are carefully nurtured for a particular environment.

All humans follow an extreme *K*-strategy. They have few young, who take years to mature and require a great deal of care. They have large brains and complex societies based on cooperation. However, he points out, human races are not identical, and it is here that his work becomes more controversial. Asians, he claims, consistently show more *K* behavior than whites, who in turn show more than blacks. He claims that there is virtually no departure from this pattern, with the implication that it is genetically-determined. His critics argue, however, that in the cases of humans, the choice between *r* and *K* strategies is largely affected by environmental forces, such as culture and economic systems. Nineteenth century Europeans, after all, produced far more offspring than their

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

descendants (who are barely maintaining their present level of population) do today. Rushton is not unaware of these criticisms, and produces compelling arguments to support his classification of races along the *r* - *K* continuum, and there can be no doubt that the nineteenth century expansion of the European population was due to greater care of the young due to improvements in health – improvements which Europeans have since extended to benefit the children of the Third World, with the resultant contemporary explosion of the Third World population.

Maturation and Reproduction

In almost every respect, Rushton claims, racial differences in the physiology of reproduction show a biologically-determined *r-K* pattern that runs from blacks to whites to Asians. Fraternal twinning, for example, which happens when a mother releases more than one egg during ovulation, is clearly an *r*-strategy of producing more and smaller young, who are more likely to be miscarried, be born underweight, die in infancy, and receive less parental care.

Fraternal twinning is twice as common among blacks as among whites, and twice as common among whites as among Asians. Triplets are ten times more common among whites than among Asians and 17 times more common among Africans than among whites. In some African populations, multiple births account for 60 out of every 1000. In Japan, where twins are very rare, they are viewed suspiciously as the products of a "litter," more akin to dogs than to humans.

Offspring of the different races gestate and mature according to different *r-K* strategies. Blacks are born earlier and smaller than whites, but are stronger and better coordinated. They can sit up and roll over sooner than whites, who can do so sooner than Asians. On average, blacks walk at age 11 months, whites at 12 months, and Asians at 13 months.

Although it is a specialized measure of development, permanent tooth eruption occurs sooner in Africans than in Europeans, and later in Asians. Among primates in general, there is near-perfect correlation between lateness of permanent tooth eruption and such things as length of life, brain size, years to maturity, and complexity of social organization.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Blacks reach sexual maturity sooner than whites, who reach it sooner than Asians. By age twelve, 19 percent of American black girls have fully developed breasts and pubic hair whereas only five percent of white girls do. Blacks, on average, have an earlier first menstruation than whites, and Asians menstruate later than whites. In the United States, the average white woman is two full years older than the average black woman when she first has sexual intercourse, and Asians start having intercourse even later than whites.

Rushton has tackled the delicate subject of genital size, which has received reluctant but official attention because of AIDS. International organizations that try to provide condoms to people all over the world have discovered that one size does not fit all. Blacks have larger penises than whites, who have larger penises than Asians. The length of the vagina also differs proportionately in each race. Black males produce more sperm than do whites, and Asian males produce the least.

In an area more likely to be influenced by environmental factors, the difference between *r* and *K* strategies still holds up. In the United States, black married couples report the greatest frequency of sexual intercourse, and Asian married couples report the lowest frequency. AIDS, like other sexually transmitted disease, is most common among blacks, rarest among Asians. Rushton claims that, compared to Europeans and Asians, African males commonly have sexual relations with more partners and expend less effort on child-rearing. Older brothers and sisters often look after smaller children. Certainly in contemporary world society there are major racial and regional differences in the number of offspring produced, although here one might question whether this was always the case. In the present-day United States, the average woman produces 14 children, grand children and great-grand children; in Africa the figure is 258. The prodigious African reproductive effort also occurs despite a shorter life-span. Statistically the evidence shows that blacks do not live as long as whites who, in turn, do not live as long as Asians.

Here, Rushton observes, are patterns of maturational and reproductive behavior that show a consistent *r-K* pattern. Quick maturity, early reproduction, numerous offspring, and shorter lives put blacks closer to the *K* end of the scale than whites, who are closer

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

to it than Asians.

Differences in sexual activity, life-span, and number of children are usually attributed to "culture" or "environment," but there Rushton maintains that the evidence, and he has accumulated a massive quantity of research work to support his arguments, is that these differences are at least partly genetic, just as size of sex organs or age of sexual maturity are almost entirely genetically controlled. Life-span and susceptibility to specific diseases is clearly hereditary in part. The age at which an adopted child will die is more easily predicted from the life-spans of the biological parents than from those of the adoptive parents. Likewise, identical twins die, on average, only 37 months apart whereas fraternal twins die 78 months apart.

What about the other components of the human *r-K* strategy, such as altruism, law-abidingness, and the other characteristics that make up distinctly human social organizations? To what extent, Rushton asks, are what we think of as personality – and the cultural institutions that reflect a population's group personality – the products of heredity, and thus properly included in an analysis of *r-K* strategy? Rushton has exhaustively surveyed recent studies of heredity and finds that these suggest a powerful genetic influence on virtually all aspects of human behavior.

Genes vs. Environment

Some of the most startling and convincing data on the relative influences of genes vs. environment come from studies of identical twins who were separated at birth and reared apart. Identical twins come from a single egg that splits in two; the twins are genetically identical. Fraternal twins are produced by a double ovulation and are no more genetically alike than ordinary siblings. (Unlike fraternal twinning rates, there are no racial differences in the frequencies of identical twinning.)

The crucial finding is that identical twins reared apart are more like each other in virtually every way than are fraternal twins who were reared in the same household. From these similarities it is possible to estimate how much of the variation in personality traits is caused by genes and how much by environment. Figure 1 shows twin-study estimates of the genetic contribution to various attitudes.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

These estimates almost certainly undervalue heritability because the method used to calculate it assumes that all aspects of environment are arbitrary. In fact, to a very large degree, people influence their own environments according to traits that are at least partly genetic. Thus, even within the same family, an aggressive child elicits different responses from parents and playmates – and thus has a different environment – from a child who is placid and cooperative. Once they are independent of their parents, young people follow their genetic propensities even more freely by choosing entirely different environments.

The methodology of heritability estimates ignores this. Thus, much of the influence on personality traits that is due to "environment" undoubtedly reflects personal surroundings that differ primarily because people shape their surroundings to match their genetic predilections.

Intelligence, which is one of the most important, stable and most frequently measured traits, is also one of the most heritable. Variations in intelligence within a population appear to be 60 to 80 percent governed by heredity.

It is important to note that heritability estimates are for variations in IQ, not total IQ. Thus, for two brothers with IQs of 100 and 120, a genetic component of 60 percent (and an environmental component of 40 percent) does not imply that 40 IQ points of the 100-IQ brother's intelligence are theoretically attributable to environment. It means only that 40 percent of the 20-point difference between the brothers – 8 IQ points – is theoretically governed by non-genetic factors.

Furthermore, no one is really sure how environment influences the remaining 40 to 20 percent that is presumably non-genetic. Non-genetic factors may well be grossly biological events like malnutrition, childhood diseases, and mishaps in the womb, rather than the household or educational differences that most people think of as environment. Such things as Head Start or special education appear to have very little lasting effect on IQ differences either between individuals or races. For the different racial groups, Rushton has aggregated the results of a great many IQ studies to arrive at the following averages: Whites - 100, Asians - 105,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

American blacks (who are about 25 percent white) - 85, African blacks - 70 to 75, Amerindians (including Central and Latin Americans with little or no European blood) - 89, Polynesians, Micronesians, Melanesians, and Maoris - 80 to 95.

Although Asians have a higher general intelligence than whites, the difference is mainly in visuo-spatial performance rather than verbal ability. This makes Asians good engineers and mathematicians, but they do not have a pronounced advantage in careers like law or language teaching. Not surprisingly, a 1980s survey of professions in the United States found that Chinese-Americans were over-represented in the sciences at a rate six times their proportion in the population. However, there were only one fourth as many Chinese-American lawyers as their numbers would suggest. Blacks were minimally represented in both fields.

Although it is common to criticize IQ tests precisely because they give disparate results by race, there are other, more obviously biological indicators of intelligence that cannot be accused of "cultural bias." One that Rushton himself has studied in depth is brain size.

Larger heads (containing larger brains) statistically show a positive correlation with intelligence. This has been shown to be true within families, with the sibling with the largest head likely to be the most intelligent. It is also true within races, with large-brained blacks or Asians likely to be more intelligent than their small-brained co-racialists. As groups, whites and Asians have larger brains than blacks. At age seven, for example, black children are 16 percentile points taller than white children, but their head perimeter is eight percentile points smaller. Asians are likely to have larger brains than whites, though some indications of larger size appear only after correcting upward for the fact that Asians are smaller than whites. A small person with the same sized brain as a big person can be thought of as having a "larger" brain, because smaller bodies require less brain to maintain basal functions.

Whites probably have about 100 million fewer cerebral neurons, on average, than Asians, and blacks have about 480 million fewer than whites. The black/Asian difference is especially significant because of differences in body size. Blacks with small brains in large bodies are at a serious intellectual disadvantage compared to Asians because a larger proportion of their already-smaller brains is probably

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

occupied with basal functions and not available for conscious thought.

Yet another directly physiological assessment of intelligence is the type of reaction-time test pioneered by Arthur Jensen of Berkeley. These tests require people to make simple choices when a light goes on. Intelligence is correlated with both speed and consistency of reaction time, and Asians perform better than whites, who perform better than blacks.

Rushton cites several additional reasons to suspect that racial differences in intelligence are due to genetics rather than environment. One is something called regression towards the mean. Individuals who are at extreme points in a normal distribution of any trait are likely to have children not so extreme as themselves. Very tall people, for example, are likely to have taller-than-average children, but their children's heights tend towards the average for the population. With respect to IQ, studies have repeatedly shown that black Americans regress towards a mean of 85 while whites regress towards a mean of 100.

Inbreeding depression scores are another persuasive indicator that racial differences are genetic. Children that result from unions of very close relatives often achieve lower scores on certain kinds of intelligence tests, indicating that the abilities measured by those tests are highly susceptible to genetic influence. As it happens, these tests are the very ones that show the greatest black-white differences, which suggests that the intelligence gap is also genetic.

Other Personality Differences

Higher intelligence is not the only hallmark of *K*-strategy. Rushton explains that the races with more *K* traits have more complex and cooperative social organizations, are more restrained and law abiding, and show more altruism. In terms of *r-K* strategy, altruism and social cooperation permit individuals to rear their young under more dependable and peaceful circumstances – which is a precondition for groups that have staked their survival on producing small numbers of large-brained but slow-maturing offspring.

For traits like altruism and aggression to be properly included in an *r-K* pattern, they must be shown to be, like intelligence, at least partly controlled by heredity and to differ from race to race.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Research suggests that these traits are greatly influenced by heredity, and that they appear early in life. In one study, children who were rated as "aggressive" by their peers at age eight were rated the same way by a different set of peers 10 years later. By the time they were 19 years old, those in the "aggressive" group were three times more likely to have a police record than those who were not considered "aggressive."

Identical twins are about twice as much alike in terms of altruism and aggression as fraternal twins. Studies in both Europe and Japan have confirmed that when a twin has been convicted of a crime, the identical co-twin is two to three times more likely also to have been convicted than is a fraternal co-twin. Shyness and sociability also appear very early in children and endure through adulthood. Studies of identical twins reared apart have shown astonishing similarities not only in personality, but in careers, frequencies of marriage, style of dress, and individual mannerisms.

Research also shows that predictions about criminal behavior in adopted children can be made more accurately from the behavior of biological parents rather than adoptive parents. Some time between the ages of 21 and 30, the adult personality is "set like plaster," and environment seems to have little effect on it. Rushton points out that most people marry and make friends with people who are genetically like themselves. They seek others who not only look but think like they do. Durability of marriage has been shown to be linked to genetic similarity of the partners – in intelligence, appearance, and in other personality traits that are to some extent under genetic control.

It is therefore not surprising that biological siblings have more similar friends than do adopted siblings. Likewise, young criminals – who appear to have a genetic propensity for crime – commonly make friends with other young people with the same propensity. This clearly demonstrated human preference for associating with others who are similar has important implications for race relations. Even very young children are conscious of race and show racial preferences. Rushton believes that ethnocentrism and "racism" are probably natural mechanisms built into the human genotype.

Expressions of altruism also have important implications for race relations. In virtually all species, the closer two individuals are,

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

genetically, the more likely they are to help each other. This makes evolutionary sense if genes are thought of as the basic units of evolution, and especially to the extent that evolution has been a group process linked to speciation. Genes for altruism are likely to leave more copies of themselves in future generations if they produce a trait that causes individuals to help their close kin survive.

In evolutionary terms, ants and bees are especially altruistic – frequently dying in great numbers to protect the colony; and they have an unusual reproductive pattern that causes workers to share 75 percent of their genes. Squirrels and monkeys can detect genetic distance between themselves and others, and are more cooperative towards close relatives.

Much of the information produced by Rushton is surprising, but so intriguing as to make the book highly readable for its content alone, regardless of one's opinions concerning the conclusions which Rushton draws. Male Rhesus monkeys are promiscuous and cannot know that the infant produced by a mate is their own. However, they have some unknown way of recognizing their genetic offspring, and are kinder to them than they are to unrelated youngsters. (Actual kinship has been confirmed through blood tests.) Belding's ground squirrels mate with multiple partners, and females have litters that contain both sisters and half sisters. Despite the fact that they share the same womb and the same nest, yet according to Rushton's sources full sisters fight less often and help each other more often than half sisters.

Among humans, preschool children are 40 times more likely to be assaulted by a step-parent – that is to say, a genetic stranger – than by a biological parent. In promiscuous societies in which fathers are not sure which children are their own, they put more effort into caring for their sisters' children than for those of their wives. A sister's child is always close kin, whereas a promiscuous wife's child may not be kin at all.

Rushton cites experiments in altruism which confirm his thesis that people are more willing to help people like themselves. Similar appearance is a good indicator of genetic similarity, and Rushton observes that racial solidarity can be viewed as a kind of extended nepotism. He also argues that it is often misleading to look

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

for sociological or economic reasons for the racial conflicts found all around the world. Genetic similarity and the desire to preserve a common set of genes are more likely explanations.

Racial Differences

The races differ consistently in the personality traits that can be classified according to *r-K* theory, just as they do in intelligence. Asians are more restrained and individually less aggressive than whites; whites are more restrained and less aggressive than blacks. These rankings are the same, whether subjects are assessed by personality tests or by their peers. From an early age, blacks are more impulsive and dominant than whites, and males boast and swagger more. Asian males behave in an less dominant and impulsive manner.

Differences in crime rates by race in contemporary America are too well established to bear repeating. But Rushton produces evidence to indicate that these behavioral differences are consistent across multi- and mono-racial societies. Resistance to genetic explanations, sometimes leads to environmental theories that are unintentionally funny. As Rushton notes, earlier in this century, all forms of deviance were so low in American Chinatowns – despite their poverty – that the ghetto was thought to protect people from crime. For blacks in multi-cultural societies, ethnic isolation in ghettoes is routinely alleged to promote crime. Although trendy talk of "self-esteem" suggests otherwise, studies cited by Rushton show that blacks have higher opinions of themselves than whites, who in turn have higher opinions of themselves than Asians. Asians are the most introverted and anxious; blacks are the least. Suicide figures reflect this: Whites kill themselves twice as frequently as blacks, and Asians kill themselves more often than whites. Self-consciousness and introspection seem to rise along with *K* characteristics.

Rates of mental instability show the opposite trend. Two hundred and forty out of every 100,000 blacks are in mental institutions whereas only 162 of every 100,000 whites are. Nor is this a function of poverty or wealth; blacks suffer from mental disorders, drug addiction, and alcoholism at higher rates than whites in all social classes. Asians, despite their introversion and anxiety, have the fewest mental problems.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Differences Within Races

Rushton also believes that *r-K* theory applies to differences between individuals of the same race. That is to say, people in the same broad racial category may tend to vary according to the same pattern that distinguishes the races. In both contemporary Europe and Africa, the following traits tend to go together: large families, short life-span, criminality, high levels of sexuality, loose family ties, frequency of twinning. His critics might argue that there is little evidence that in Victorian England, for example, and other earlier periods in European history when families were larger, that criminality was linked to size of family, but the evidence Rushton produces for contemporary Western society is convincing.

Mothers of fraternal twins are more likely than other mothers to have had early first periods, larger families, lower birth-weight children (even when they are singletons), more infant mortality, to have been promiscuous, and to have shorter lives. Rushton has found that in all societies, fraternal twins are more likely to be born into the lower than the upper classes.

A Swedish study determined that girls who have early first periods are more likely to cheat, be truant, and try marijuana than girls who have late first periods. In the United States, early maturation is correlated with promiscuity, illegitimate births, leaving school, crime, and other social problems. Early sexual maturity seems to be heritable, with daughters resembling their mothers.

If altruism is an important *K* trait, crime would be an extreme *r* trait according to Rushton. Across broad populations, crime is statistically associated with behavior that follows the *r* strategy: large families, illegitimacy, low intelligence, early sexual maturity, promiscuity, weak family ties, little investment in children, and a short life. Rushton suggests that the entire complex of *r-K* trait differences is largely under genetic control, and that it characterizes different social classes just as it does races. He produces evidence which suggests that most physiological *r-K* traits are heavily influenced by heredity. He makes the additional point that physiology is closely correlated with many other forms of behavior previously thought to be independent of heredity but now found to be greatly influenced by it. The result is a strong case for believing that the patterns of

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

behavior that distinguish races as well as individuals are largely inherent, reflect a consistent *r-K* pattern, and are impervious to social "programs."

Rushton takes the argument one provocative step further. In the current era of social mobility, in which most hereditary social privileges have been substantially weakened, people more easily succeed or fail in life according to their native abilities. This being the case, it follows that the children of the rich are likely to be smart and talented because they inherit the qualities that made their parents rich. This is not to say that they may not also benefit from environmental advantages; but the evidence of the twin studies cited in this book indicates that environment is less important in determining much human behavior than heredity. Indeed, Rushton points out that a child's IQ is a better predictor of his adult social status than is the social status of his parents. Also, when the unintelligent children of the rich start descending the social scale, they take on the habits and values of their new class rather than keep the ones of the class into which they were born.

Rushton's findings present a serious challenge to the egalitarian dogma. Unfortunately, a common reaction to his work is simply to make wild accusations about his motives. In an article called "Professors of Hate," the October 20 1994 issue of the popular non-academic journal *Rolling Stone* present him as a prejudiced and bias researcher motivated by vicious racism. But those who read his latest book will think more carefully. His accumulated data is too massive to be discarded in this cavalier fashion.

Whether or not one accepts Rushton's theses in whole or in part, or even rejects them, it is undeniable that societies dominated by those who oppose freedom of scientific enquiry cannot but degenerate. Anyone who wants to understand the world as it, and to base policy on facts rather than on fantasies, owes Rushton a debt of gratitude for having the courage to challenge prevailing value-systems which are based on convenience rather than fact. Those who would seek objectivity in the social sciences cannot afford to by-pass this highly controversial but undoubtedly thought-provoking book.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

ASPETTI DELL'EVOLUZIONE UMANA

The First Volume in Studies of Anthropology/Studi di Antropologia. A Series Promoted by the Chair of Anthropology of Naples University and Edited by Francesco G. Fedele

Aspects of Human Evolution
Includes 12 Papers by
UMBERTO ALBARELLA, Naples
FRIEDRICH BRACHES, Simon Fraser University
FRANCESCO DE MATTEIS, Naples
FRANCESCO FEDELE, University of Naples
GIOVANBATTISTA LONGO, Naples
FULVIO MAGARA, Naples
RICHARD SHUTLER, JR., Simon Fraser University
VINCENZO SORICILLO, Naples

Assistant Editor: Jill Morris (B.A. Hon., London)
192 pages, 27 illustrations, 14 x 22 cm
Price: $10.00

For information and orders, contact:
Professor F.G. Fedele, Cattedra di Antropologia,
V. Mezzocannone 8, 80134 Napoli/Naples, Italy

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

BOOK REVIEW ARTICLE

The Consequences of Variable Intelligence

Tatu Vanhanen
University of Helsinki, Finland

Human Intelligence and National Power:
A Political Essay in Sociobiology
Seymour W. Itzkoff
New York: Peter Lang Publishing, 1991.

The Road to Equality: Evolution and Social Reality
Seymour W. Itzkoff
Westport, Connecticut: Praeger, 1992.

The Decline of Intelligence in America:
A Strategy for National Renewal
Seymour W. Itzkoff
Westport, Connecticut: Praeger, 1994.

Seymour W. Itzkoff argues in his three books published in 1991-94 that there are significant hereditary intellectual differences between individuals and groups and that as a consequence of this variation there are very large differences in educability, social status, and economic achievements of individuals and groups. According to him, intelligence is part of each individual's inheritance, as much as one's height and personality. Therefore, "the issue of intellectual variability in humans and the consequent variability in average intelligence between groups of individuals, and their ethnic, racial, religious, and national identities, is the Copernican problem of our time" (1991, 10). He challenges the egalitarian dream of socialists, sociologists, and liberal egalitarians, according to which intelligence is uniformly distributed in all populations and all humans were equal to any social and intellectual task if only they were not held down. Itzkoff points out and enumerates great failures of social policies

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

based on these unrealistic views of human nature.

The theme is the same in all three books, but he discusses it from different perspectives. In *Human Intelligence and National Power. A Political Essay in Sociobiology* (1991), he focuses on the evolution of human intelligence and the emergence of intellectually different human groups, as well as on various consequences of the variability of human intelligence, including the European florescence, the failure of communism, the rise of Japan's power, the decline of the United Sates, and the Third World debacle. He emphasizes the significance of intellectual homogeneity in ethnically homogeneous nation-states and examines the ways to raise the level of general intelligence "g". In *The Road to Equality: Evolution and Social Reality* (1992), Itzkoff focuses on the failure of Marxists and liberal egalitarians to create an egalitarian and classless society and argues that their basic assumptions of human nature were wrong. They failed to recognize that human beings are endowed with differing quantities and qualities of intelligence and that the same concerns ethnic groups. From this perspective, he examines the hallucinations and misfortunes of our evil century, the methods to achieve classlessness and to end oppression and degradation, the ethic of intervention, the democratic quest, essential feminism, the mysterious ethnicity, and the significance of the wealthy. His message is that America's social dilemmas are in part due to hereditary intellectual differences between individuals and groups. In the latest book, *The Decline of Intelligence in America: A Strategy for National Renewal* (1994), Itzkoff analyses the problems and social pathologies of America and claims that they are related to the decline of general intelligence. His central idea is that new generations are coming from the lower end of the intellectual, and thus the social, scale. As a consequence, a population of permanently poor Third World Americans is emerging. In the second part of the book, he recommends policies intended to turn the trend. The solution proposed in this book is simple: the government should stimulate the finest to form families of the traditional sort in which children are conceived, born, raised, and educated to the highest levels for which they are capable, and the helpless should be encouraged and guided not to have children that they cannot rear and educate to functional cultural levels.

The problems analyzed in Itzkoff's books are extremely

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

important. He has had courage to take up issues that have not been discussed because it has not been politically correct to assume that there might be intellectually different human groups and that social inequalities might in part be due to variable intelligence in humans. It has been difficult even for evolutionary biologists to accept the idea that humans vary in general intelligence (see, for example, Gould 1981; Lewontin 1982). Even more difficult it has been to accept the claim that there are hereditary intellectual differences between ethnic groups (see Vine 1994). I try in this essay to tell about Professor Itzkoff's central ideas, arguments, evidence, examples, and renewal proposals and to evaluate the practical significance of his theoretical insights and reform proposals.

The Evolutionary Roots of Intellectual Differences

Let us start from his central idea concerning hereditary differences between individuals and groups. How to explain the origin of assumed group differences? He traces the origin of intellectual variability of human groups to the geographical dispersion of early humans and to the variation in their environmental circumstances. According to him, *Homo erectus* originated in Africa, but it possibly split into modern geographical races of man already one or 1,5 million years ago when some groups emigrated from Africa to the other Old World continents. At this stage of human evolution, from about 1,5 to 0.5 million years ago, various groups of humans, whether races or ethnic groups, seem to have had similar levels of intelligence. There were not many differences in tools used by them. However, after 500,000 B.P., a revolution begins to occur in the North, in Europe and western Asia among Caucasoids during the Pleistocene Ice Ages. Intelligence helped the survival of people in harsh and variable environmental conditions. High intelligence was useful. The average brain size and intelligence increased in Caucasoid populations through natural selection. He says that "in the challenging environment of the north, a big brain had extraordinary selective value. These humans could think deeply and analytically" (1992, 37).

Finally, about 35,000 B.P., Cro-Magnon appeared in Europe. His assumption is that *Homo sapiens sapiens* evolved in Europe as a consequence of adaptation to harsh and variable environmental conditions: "the northern quadrant of humanity subject to the flow

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

and ebb of the glaciers inhabited a far more challenging and dangerous environment than those living in the tropical south" (1991, 194). There was not similar pressure for intellectual evolution among the human populations living in "millions-of-years-old tropical garden of Eden." Consequently, northern populations achieved a higher level of general intelligence than tropical populations.

Itzkoff assumes that the ability of large-skulled, adaptively able northern sub-species of Homo to handle this ferocious Ice-age environment and even prosper probably forced them to migrate for more space. Over the period of 150,000 years, they moved east and south and spread their genes. He further assumes that "modern blacks originated in Western Africa after 10,000 B.P. as a result of mixtures between indigenous proto-Negroids and Pygmies, and incoming Caucasoids" (1991, 40). As a consequence, "Negroid and Caucasoid races have biologically more in common with each other than they do with any of the other races" (1991, 42). The original Mongoloid descendants of *Homo erectus pekinensis* along the Yellow River Valley also absorbed a steady stream of Caucasoid wanderers across the Siberian and Kazakhistan plains. The same concerns the Koreans and Japanese, "who speak a Uralic/Altaic language related to the hybrid Siberian steppe peoples and thence to the Estonians and Finns" (1991, 42). In this way the Cro-Magnon people wandered from their unknown Eurasian homeland to the other parts of the world "hybridizing with the existing transitional erectine-sapiens humans all over the world." The New Guinea, Australian and Tasmanian Australid populations are possible exceptions (1991, 18, 39). Today's "racial divisions are the remnant memories of ancient human separations that go back several million years" (1992, 7).

This is a very interesting assumption on the origin of intellectual differences between human populations and of geographical races. It differs radically from interpretations, according to which the evolution of modern people took place in Africa. C. B. Stringer, for example, claims that "all living people are closely related and share a recent common ancestor who probably lived in Africa. From that African ancestral group, all the living peoples of the world originated. " He continues that the ancestors of Europeans , Asians and the populations of the American and Australian continents probably share common ancestors within the past 60,000 years. This

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

idea does not presuppose any significant intellectual differences between human populations. In fact, Stringer emphasizes their similarity: "What is certain is that the early modern peoples of each part of the world were all similar in basic anatomy and behavior, but regional differences in physique and culture rapidly developed subsequently" (Stringer 1992, 249. See also Howells 1992; Ritter 1981, 98-101). Stephen Jay Gould, similarly, assumes that *Homo sapiens* "is tens of thousands, or at most a few hundred thousand, years old, and all modern human races probably split from a common ancestral stock only tens of thousands of years ago" (Gould 1981, 323). Itzkoff's assumption differs from the "Out of Africa" hypothesis in two important points: (1) he claims that human populations have racially differed from each other one or 1.5 million years, although there have been new mixtures later on, and (2) he provides a plausible explanation for the origin of intellectual differences between human populations. The alternate hypothesis would be unable to provide any explanation for intellectual differences between the northern and tropical populations. The crucial question is whether such differences really exist.

General Intelligence "g"

Itzkoff's claims that individuals vary in intelligence and that such variation is principally due to hereditary factors. What kind of evidence does he provide to support this claim? He refers to intelligence tests (I.Q.) that have been carried out in various countries since the beginning of this century. They indicate consistently that humans vary in intelligence. A heated debate has continued on the question whether such variation is more due to hereditary or environmental factors and whether there is any "general intelligence" that could be measured (see Gould 1981; Lewontin 1982; Itzkoff 1987). Itzkoff refers to evidence of the existence of general intelligence "g" and of its hereditarian character. According to him, 50-80 percent of general intelligence seems to be due to hereditarian factors. Innumerable studies of monozygotic and dizygotic twins have provided evidence on the hereditary nature of intelligence. For example, he says, "identical twins reared apart in differing life circumstances are much more similar intellectually than fraternal twins reared under the same roof" (Itzkoff 1987, 142; cf. 1991, 27).

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Worldwide studies of sibling adaptation, he continues, "regardless of the race or ethnicity involved, reveal that a sociologically uplifting environment has no long-term impact either on the personality or the intellectual profile that the children bring with them from their biological heritage" (1992, 88). The results of these studies also imply that the genetic variation in intelligence depends on a relatively small number of genes because the possible variability between even closely related individuals seems to be enormous (see 1992, 31-32; 1994, 101). Itzkoff comes to the conclusion that it "should be clear to all but the most ideologically and theologically devout environmentalists that human achievement and personality have a dominating biological and thus hereditary component" (1992, 31). I think that it would be difficult to disprove his argument that human intelligence varies and that hereditary component is dominating in this variation.

If we accept the argument on the hereditary intellectual differences between individuals, it becomes difficult to deny the possibility that there might be hereditary intellectual differences between ethnic groups, too. This is a much more inflammatory proposition than the claim of individual intellectual differences. Everybody has probably made observations of great individual differences in intelligence, but it is more difficult to make observations of the average intelligence of ethnic or racial groups. Therefore, it has been easy to deny the existence of such differences and to argue that there cannot be any significant differences in the average intelligence of ethnic or racial groups. And if all human races separated from a common ancestral stock in Africa only some tens of thousand years ago, it would be difficult to find any plausible explanation for the emergence of such differences. However, Itzkoff has a plausible explanation for the origin of intellectual differences between human groups, as mentioned above, and he provides data that indicate the existence of such differences among contemporary ethnic groups His evidence is based on the consistency of the results of intelligence tests (I.Q.) carried out in many countries.

According to the results of intelligence tests given in his books, the average I.Q. for American whites is 100, for African-Americans 82-85, for Hispanics somewhere in between, and for native Americans in the low to mid-90s, whereas it is 103-107 for Japanese and probably more than 100 for Han Chinese, too. Itzkoff

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

stresses that they are ethnic groups that differ from each other in intelligence, not racial groups, but, on the other hand, he emphasizes the difference between northern and tropical populations. In general "the northern peoples of the world, the residue of the original Caucasoids and Mongoloids have more on average brain power" (1992, 50). This is probably the most controversial part of his argumentation, but because his conclusions and policy recommendations are based on it, those who disagree with him should try to show that he is wrong. It is not enough to say that it is not politically correct to make such propositions. In open society, people should be prepared to discuss and examine also the ideas that contradict their own convictions and belief systems.

Itzkoff provides additional support for his thesis from empirical data on educational and economic achievements of different ethnic and national groups. According to him, it was natural that the technological civilization emerged in the North, in the area of Caucasoid Eurasians. The present great economic inequalities between the north and the south are related to intellectual differences. Therefore, it has been difficult to equalize economic conditions between the industrially developed north and the Third World countries. It has succeeded only in the parts of the world where national ethnic groups have been intellectually approximately equal with Caucasoids. This concerns particularly northern Mongoloids, Japanese, Koreans and Han Chinese. On the other hand, development aid from the north has not been enough to generate and maintain technological development in Africa. Itzkoff finds further evidence for his thesis from the fact that all immigrant groups have not succeeded equally in America. According to his data, more intelligent ethnic groups have succeeded much better than less intelligent groups.

Social Consequences

We come to the social consequences of variable intelligence. They are enormous. For example, Itzkoff refers to many types of social facts and problems connected with variable intelligence in humans. He argues that social inequalities are persistent because humans vary in intelligence. He accuses the ideology of egalitarianism for the genocides and holocausts of this century. Communists killed

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

tens of millions of people of higher intelligence to further equality. The failure of communism was caused, according to his interpretation, by their erroneous assumption that intelligence is distributed homogeneously among individuals. They believed that the masses could easily be educated to fill the vacuum created by the destruction of the bourgeoisie establishment. It was not so. Marxists had forgotten Marx's refutation of those sections of the Gotha Program (German socialist parties) that asserted the absolute uniformity of human abilities. Marx himself believed in the existence of intellectual differences in human beings.

Itzkoff further argues that Japan's economic success story has been powered by the high intelligence of the ethnically homogeneous Japanese people. Because of universally high intelligence of its ethnically homogeneous population, the Japanese state does not need to subsidize any permanently "catch-up" portions of the nation, and because there is a rich supply of talent ready to step in, the salaries of executives remain relatively low. In Japan, the average chief executive earns about eight times the average of his workers; in the United States the average chief executive earns about 160 times the worker average (1992, 152). Itzkoff presents an extremely inflammatory and important explanation for the failure of modernization in most parts of the Third World. According to his assumption, it is due to clear differences in average intelligence between the northern and southern populations. Northeast Asia, including mainland China, Taiwan, Hong Kong, Singapore, and South Korea, are rapidly rising from war and political chaos because of the high intelligence of their populations, whereas in Africa, Central and South America, and many parts of southern Asia, the pace of modernization has been at best slack. Many hundreds of billions of dollars in loans have simply gone down the drain in corruption and incompetence. The reason for the Third World debacle is in the fact that the level of intelligence is lower in the tropical south. He supports this assumption by the experiences gathered from minority populations of the tropical south living in the north. Some members of such minorities thrive and prosper, but the majority falls into despair. On the other hand, "ethnic Han Chinese living in either Indonesia, Malaysia, or the Philippines achieve at levels parallel to their Chinese compatriots in the U.S. or Hong Kong, despite

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

extensive negative discrimination." And Japanese, Germans, and Italians born in Brazil achieve as their confreres do in their respective homelands (1991, 195).

The Decline of the United States

The major problem examined by Itzkoff concerns the decline of the United States and its causes. He complains of the lack of open discussion and warns that never "in history has a society that has blocked the open search for truth survived to prosper. " In America, the intellectual leadership of the great public media institutions and the universities has effectively handcuffed the elected political representatives and prevented them from considering solutions: "The taboo word is, of course, race. Because so much of our internal tragedy does involve the minorities of color, the stereotyped excuse is that discussions about biological intelligence and the variable behavior that it elicits will militate against the interests of these minorities." He does not accept this argumentation, and he tries to show that it is in the interest of all Americans to think deeply "about this reality of variable human intelligence and whether there might be a connection between this issue and the fact that our national profile is sinking so rapidly" (1994, 6).

What does he mean by "decline of the United States?" Itzkoff claims that this decline "can be confirmed by any of the criteria that historians have ever used to measure the state and condition of a nation and its people" (1994, 3). The indicators of decline used by Itzkoff include the rise of criminality in American cities, the status change from a great creditor nation to the world's largest debtor nation, the enormous loss of high-wage jobs, the fact that some 50-80 percent of the workforce is not able to work and produce at an internationally competitive level, the decline in educational standards and achievements of the public schools as indicated by the quarter-century decline of SAT (the Scholastic Aptitude Test) scores, social disintegration, and the expanding poverty populations at the bottom of society. It seems to me that he has presented enough empirical evidence on the decline of the United States compared to Japan or to some European nations.

Itzkoff explains the economic and educational sinking of the United States by the decline of the average intelligence. The welfare

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

policies encouraged the poorest, least capable sectors of the population, from all the races and ethnic groups to have children. However, he does not provide much statistical evidence for his claim that poor sections of the population have produced relatively more children than more wealthy and educated ones. It is not self-evident that this claim should be true. According to sociobiological theories, wealthy and dominant sections of the population are expected to have been reproductively more successful than poor ones, at least until modern times (see Betzig 1986; Rogers 1990, Roskaft et al. 1992). Therefore, I would like to see more statistical evidence. One example, to which he refers, concerns the blacks. The proportion of black citizens in the U.S. grew from 9.8 percent in 1940 to 12 percent in the mid-1980s.

Itzkoff sharply criticizes the welfare-policies that have produced a new human zoo. He says: "Like animals whom we now have trained to reproduce in captivity, there is a new and growing class of Homo sapiens living within the ostensibly modern societies." He assumes that even Marx would look at this new and classically unrecognized situation with horrified wonder: "What he would see would be the public welfare hospitals where they are born, the flocks of social workers who minister to their dole, the Head Start teachers, then the special education and remedial classes in the state schools, the drug clinics, probation officers, public health nurses, the police and the jails, the crime-ridden public housing projects, the food-stamps, the underground subways, bus terminals, and railway stations and the spaces over the heating vents on the public streets that serve as sleeping places, the municipal hospital emergency rooms, and then the AIDS wards and hallways where they die" (1992, 90-91).

On the other hand, the invention of "the pill" and feminist ideas decreased the birth rate among educated and more intelligent sectors of the population. Liberal equalitarians told the people that it was not important who had the babies. The children could easily be educated to high levels of social productivity, they preached. To the educated classes, "both men and women, they urged liberation, careerism, and material consumption, heaven forbid conceiving, bearing, and raising large families" (1992, 91). As a consequence, "the United States mean I.Q. has dropped about five points over the last

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

several generations, the result of this differential birth rate" (1991, 163-187).

Briefly stated, Itzkoff argues that the poor and intellectually lower sections of the population have been reproductively much more successful than the wealthy and more intelligent sections of the population and that it has caused the fall of national intelligence. He estimates that already by 1994, roughly half of the American population can be seen to be sinking below international levels of intellectual and educational achievement needed to maintain competitive production. And he asks, what is "to become of these individuals, and then of the formerly wealthy nation that encouraged their coming into being?" (1994, 107). He assumes that they will be pushed deeper and deeper into the culture of poverty. What to do?

Remedies Proposed

Professor Itzkoff argues that because social pathologies and other problems of the United States have been aggravated by the decline of general intelligence of its population, the best remedy would be to increase the level of general intelligence. He stresses that it is not a purely racial or ethnic issue because those at the bottom of the intellectual pyramid come from all groups, white, African-American, Latino, and others. It is clear, however, on the basis of his books that the problem focuses on African-Americans and other ethnic groups originated from the south. The remedy proposed by Itzkoff is simple: the most intelligent and educated men and women should bear and raise many more children than those from the bottom of the economic and educational social class structure. Besides, the traditional nuclear heterosexual family should be saved. He accuses liberal egalitarians for hating monogamy and the nuclear family: "They fear and despise men as heads of household, and thus with a woman actively raising her brood of children in the home, the kids not out in day care or with illegal aliens acting as 'foster' parents. The idea that males and females differ in any important bio-cultural manner, physical or intellectual, is anathema to their unisex ideology, and their despising of historical male and female values." As a consequence of liberal policies, Itzkoff continues, we "have lost the children of almost two generations of our educated and liberated women. It has had almost the same effect as if it had been genocide"

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

(1994, 126, 133).

According to his interpretation, it will depend on the policies of the government whether the reproduction trends change to the proposed direction or not. The government should pass " social policy legislation aimed at creating inducements, as well as legal protections, that will lead to the wealthy and successful having more than their share of children and the poor limiting their procreative activity in the interest of their own individual social and economic aspirations" (1992, 160). The prescription is clear, but it seems to me that he does not yet have any clear idea what such "social policy legislation" should include and how the government could carry out such policies. However, he makes some proposals. First, people should be reeducated. Second, job priorities should be given to married men with families. Third, all births should require the identification of the father. Fourth, men and women at the top of social scale without children should be punished through the tax system. The government should try "to establish a long-term social policy that will 'encourage' the birth of 50 percent more children from the upper half of the social and income brackets than from the lower." It is not clear how it could be done, although he says that we "must persuade the potentially parasitic classes at the top and at the bottom of society to act appropriately. The wealthy educated will have to validate their socially acquired assets by bearing their own offspring or adopting needy children. Those at the bottom should be humanely persuaded, with generous gifts if deemed appropriate – but for one generation only – to refrain from conceiving and having children" (1994, 192-195).

Itzkoff makes several other interesting reform proposals. I refer to only two of them. He would like to decrease the relative number of African-Americans because their average level of general intelligence "g" is low. The discouragement of illegitimate births would serve this purpose. On the other hand, he suggests that the "talented tenth" of the African-Americans should produce many more children than the less intelligent majority. In this way it would be possible to raise the general intelligence of the African-American minority. Besides, the United States should change its immigration policies radically. No more illegal immigration, he says, and "those who are here in violation of our laws, along with the children that

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

have been born here in the interim," must return to their homelands (1994, 161). Only talented people, irrespective of their race, should be allowed to immigrate to the country.

Itzkoff is deeply worried about the declining intelligence in America because he would like to retain his country among the first class nations in the competitive world of the twenty-first century, which is not possible without a highly intelligent population. America's crisis is a natality crisis, he says, but the leadership of the United States is indifferent to this issue. It does not care who is having the children.

Discussion

I agree with Professor Itzkoff in most points of his analysis. Evidently humans vary in intelligence, and this variation is principally due to hereditary factors. He has convinced me that ethnic groups may also vary in general intelligence "g". I agree with him that social consequences of intellectual variability are enormous and that they can be seen in all areas of human life. The origin of social inequalities is in the fact that humans are not similar in their intelligence and other capabilities. It is also quite probable that a significant part of the persistent poverty in the Third World is related to intellectual differences between ethnic groups. He is probably right in his central assumption that the level of general intelligence would increase if the upper half of social and income brackets could produce 50 percent more children than the lower half. The problem is how to get people to follow his advice.

According to the sociobiological inclusive fitness hypothesis, all organisms are programmed to further their own reproductive interests and not to concern themselves about others (see, for example Dawkins 1976; Alexander 1980). Therefore, I assume that it would be extremely difficult or impossible to persuade the members of any minority ethnic group to sacrifice their own reproductive interests for the assumed higher interests of the nation. It might be possible to achieve some results by economic and other inducements, but it is quite possible that coercion and even force would be needed to achieve substantial results. Itzkoff has not proposed or discussed the use of coercion, although he proposes that the births should be reduced at the bottom of the social and economic scale and that all

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

births should require the identification of the father. Is this a case in which the government might use coercion and even force to carry out its family policy? If the father cannot be identified and made responsible for the child, the state might require the prevention of the birth by compulsory abortion. However, if coercion and force become necessary to prevent the births of unwanted children, we have to ask whether the aims are worthwhile enough to justify such policies. Is the maintenance of intelligence so important that it justifies the use of coercion and force against women who break the legal rules of reproduction? I do not know, and Itzkoff has not discussed this problem. It should be discussed because I do not believe that his radical reproductive reforms could be carried out without coercion.

It is true that African-Americans are at the bottom of the social and economic scale, but I would like to point out that they have not been losers in the Darwinian struggle for existence. In fact, according to the data given by Itzkoff, they have been even more successful than the whites because their relative number has increased in the United States since the 1940s. It means that in some way they have become better adapted to their social environment than the white majority. Despite their poverty, they have borne and raised children more than their share, whereas many wealthy and educated and probably also highly intelligent whites feel themselves so poor and insecure that they cannot afford to have children. We should remember that in the Darwinian struggle for existence reproduction is the only criterion of success, not wealth, education, or intelligence. By this criterion the American blacks have been more successful than the whites. Itzkoff has brought into discussion the issue of variable intelligence in humans and indicated through extensive evidence and examples its crucial importance in national and international politics. I think that it is time for us to take biological factors seriously and examine their relevance from various perspectives. As Itzkoff says, the scientific evidence for the biological roots of our social behavior continues to accumulate (1994, 5). It is becoming clear that environmental egalitarians were wrong in their traditional assumption that human behavior and social structures are principally, if not completely, shaped by our environment. Human nature matters probably more than we can imagine. Itzkoff has focused on one very important aspect of human nature, to hereditary

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

intellectual differences between individuals and groups, and he has disclosed its social and political relevance in superb manner.

References

Alexander, Richard D,
1980 Darwinism and Human Affairs. London: Pitman Publishing.

Betzig, L. L.
1986 Despotism and Differential Reproduction: A Darwinian View of History. New York: AIdine.

Dawkins, Richard
1979 The Selfish Gene. London: Granada Publishing.

Gould, Stephen Jay
1981 The Mismeasure of Man. Harmondsworth, Middlesex; Penguin Books.

Howells, W. W.
1992 "The dispersion of modern humans," in Steve Jones, Robert Martin and David Pilbeam (eds.), *The Cambridge Encyclopedia of Human Evolution*. pps. 389-401. Cambridge: Cambridge University Press.

Itzkoff, Seymour W.
1987 Why Humans Vary in Intelligence. Ashfield, Massachusetts: Paideia Publishers.

Lewontin, Richard
1982 Human Diversity. New York: Scientific American Books.

Ritter, Horst
1981 Humangenetik: Grundlagen - Erkenntnisse - Entwicklungen. Breisgau: Herder Freiburg.

Rogers, Alan R.
1990 "Evolutionary Economics of Human Reproduction," *Ethology and Sociobiology* Vol. 11 , No. 6.

Roskaft, Eivin, Annelise Wara, and Auslaug Viken
1992 "Reproductive Success in Relation to Resource-Accessand Parental Age in a Small Norwegian Farming Parish During the Period 1700-1900," *Ethology and Sociobiology* Vol. 13, Numbers 5/6.

Stringer, C. B.
1992 "Evolution of early humans," in Steve Jones et al. (eds),

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The *Cambridge Encyclopedia of Human Evolution*. ss. 241-251. Cambridge: Cambridge University Press.

Vine, Ian

1994 "The Political Abuse of Sociobiology - A Test Case" (a book review of Itzkoff's "Human Intelligence and National Power: A Political Essay in Sociobiology"), *ESS Newsletter* No. 33, January 1994, 13-31.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

BOOK REVIEW ARTICLE

Race Differences in the Annals of Science

Kevin Lamb

The Retreat of Scientific Racism: Changing Concepts of Race in Britain and the United States Between the World Wars
by Elazar Barkan
Cambridge University Press, 1992: 381 pp.
The Evolution of Racism: Human Differences and the Use and Abuse of Science
by Pat Shipman
Simon and Schuster, 1994: 318 pp.
The Science and Politics of Racial Research
by William H. Tucker
University of Illinois Press, 1994: 371 pp.

> From this lack of knowledge there has arisen that fine dictum of morality so much bandied about by the philosophical crowd, that men are everywhere the same, and that having everywhere the same passions and the same vices, it is rather useless to attempt to characterize the different races; which is just about as reasonable as if one where to say that one could not distinguish Peter from James, because each of them has a nose, a mouth and eyes.
>
> Will one never see the return of those happy times when people did not concern themselves with philosophy, but when such men as Plato, Thales, or Pythagoros, smitten with an eager desire for knowledge, undertook the longest journeys solely to obtain information, and went far away to shake off the yoke of national prejudices, to learn to know men by their conformities and by their differences ...?
>
> Jean-Jacques Rousseau
> *Discours sur l'origine et les fondemens de l'inegalité parmi les hommes*[1]

[1] Rousseau, Jean Jacques 1755. *Discours sur l'origine et les fondemens de l'inegalité parmi les hommes.* Amsterdam (Rey); See also: Baker, John 1975. ***Race.*** Oxford University Press, p. 16.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Nothing infuriates egalitarians who are committed to the dream that all people are biologically "equal" more than the scientific study of race differences. The recent furor over *The Bell Curve* shows how egalitarian dogma encroaches upon scientific matters. Two chapters and one appendix from this book (100 pp. out of 845 pp.) survey the empirical record on ethnic differences. Instead of evaluating the merits of the data cited on these pages, critics dismiss the evidence with groundless rhetoric: "tainted sources," "right wing" analysis, "racist drivel," "genetic determinism," and so forth.

The late Richard Herrnstein and Charles Murray explain in *The Bell Curve* why genetic factors *plausibly* account for persistent ethnic differences in IQ. Overall, two deciding factors sway their view: the validity of the genetic hypothesis on the one hand and the inadequacy of environmental explanations on the other. While Herrnstein and Murray show why genetic factors most likely contribute to the explanation of the race differences in intelligence persistently identified by psychologists, they express the belief that the evidence to date is incomplete and further research is required in order to draw any definite conclusions.

The hysterical reaction to this book fits a clear pattern among critics who question the study of race differences. Character assault overrules any rational consideration of the evidence that supports genetic-based race differences. Consider Charles Lane's "The Tainted Sources of *The Bell Curve*" from *The New York Review of Books*. In his ad hominem attack on *The Mankind Quarterly*, Lane neither refutes any of the research findings published in this journal nor provides any evidence for environmental theories that demonstrate *why* genetic factors are irrelevant in IQ differences. Lane succeeds in simply extending the definition of "racism" to include respected scholars who attempt to explain the nature of race differences. He intentionally tries to put the most sordid spin on a reasonable scientific endeavor. Why? In essence, the validity of innate race differences in intelligence (or other behavioral traits) completely undermines the egalitarian concept that "all men are created equal." The legitimacy of the modern welfare state and the rationale for egalitarian policies become highly suspect.

Three recently-published books focus on the history and development of scientific research into race differences. What these

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

studies inadvertently confirm is that the empirical record of the behavioral sciences has scientifically discredited egalitarianism.

Barkan's historical narrative as well as the more recent work by Shipman explore how changes within the social sciences have influenced the scope and direction of racial research. On this point, Barkan is direct and to the point: "The social diversification of the scientific community has been an important factor in the redefinition of the race concept".[2] One of the key facts to understand is that for most of this century, social ideology has defined the concept of race. Aside from this essential point, all three works explore the historical ties between Darwinian evolutionary theory, eugenics and the study of race differences. Despite some similarities on historical matters, each account differs in how the author approaches this subject and in the selective use of supporting material.

Barkan and Shipman provide some revealing details on the egalitarian takeover of anthropology, a development that flourished under the influence of Franz Boas and Ashley Montagu. Most of the field's leading figures are recreated into heroes or villains. In Barkan's view, a blind devotion to the concept of equality delineates legitimate scientific research from pseudoscientific endeavors. The protagonists are scientists who have embraced egalitarianism: Haldane, Huxley, Penrose, Hogben, Malinowski, Boas, Montagu, Mead and Klineberg. The detractors, mainly eugenics advocates, consist of a familiar cast of characters: Castle, Davenport, East, Fisher, Gates, Goddard, Grant, Hooton, Keith, McDougall and Pearson. Their work is constantly suspect for the implied reason that these men had an undesirable axe to grind.

This kind of ad hominem attack, one that Tucker also relies upon, distorts the motives of scholars who investigate ethnic differences. The basis for rejecting what Barkan calls "scientific racism" rests upon subjective judgments of another scholar's work. Hence, objective standards for evaluating research that is "racist" is never put forth by any of these authors. Just as dubious is the presumption of human equality by Barkan and Tucker. Such proof

---

[2] Barkan, Elazar 1992 *The Retreat of Scientific Racism*. Cambridge University Press, p. 343.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

is grounded in ideological assumptions that have not been critically examined. Early setbacks in classifying and defining race in biological terms reflect primitive techniques of anthropometry as much as it discredits race as a biological concept. As Carleton Coon notes in his seminal work *The Origins of Races*,

> In studying racial differences in living men, physical anthropologists are now relying less and less on anthropometry and more and more on research in blood groups, hemoglobins, and other biochemical features. This is all to the good because the inheritance of these newly discovered characteristics can be accurately determined. In them, racial differences have been found, differences just as great as the better known and much more conspicuous anatomical variations.[3]

Barkan shows why egalitarians were effective in contesting race as a biological division within mankind. Their effectiveness had very little to do with advancing a valid alternative theory that refuted the biology of ethnic differences. As Carl Degler points out, these critics were skilful polemicists who successfully promoted their own ideological preconceptions:

> Certainly a general urge to know, combined with a professional and scientifically derived willingness to accept new information and insights were among the forces behind the transformation in outlook that removed race in particular and biology in general from the study of human behavior. But as we have seen in regard to the shift in outlook among anthropologists and sociologists, professional or scientific attitudes were not the full explanation. One needs to look beyond professionalism and standard science; for the change in outlook was too fundamental, to radical to be accounted for on those grounds alone. After all, we are not dealing here with a long-held, well-substantiated theory (that is, race) which new and conclusive evidence had unambiguously disproved and overturned. Rather we see essentially the substitution of one unproved (though

[3] Coon, Carleton 1962 *The Origins of Races*. New York: Knopf, p. 662.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

strongly held) assumption by another.[4]

The praise Barkan heaps upon Boas, Benedict and Mead stands in sharp contrast to his unrelenting criticism of Keith, Davenport, Fisher, Gates and Hooton. Here is how he summarizes Boas's contributions to anthropology,

> The growth of anti-racist thought in the social sciences is often associated with the name Franz Boas. Boas's overwhelming influence on American anthropology of the first half of the century, through his own work and that of his disciples, has been acknowledged in memoirs and anecdotal biographies, mostly by admiring students. His list of honors during a long professional career, the numerous distinguished students he taught, and his recent popularity in historical literature, all testify to his justified importance.[5]

By comparison, Barkan's condescending description of the legacy of R. Ruggles Gates is just as ideologically tainted. Identified as a stubborn maverick, Gates is depicted as "among the most radical racists in British science and one who was to carry the banner of scientific racism for four decades".[6] Barkan cites two sentences from J. A. Fraser Roberts' obituary notice that he claims reveals Gates as an "outcast" and notorious racist. The full text of this detailed obituary shows nothing of the kind. What is clear in this instance is that Barkan's portrait of Gates is a distortion whereby two sentences are taken out of context in order to tarnish an otherwise distinguished scholar. Consider Roberts' depiction of Gates,

> Reginald Ruggles Gates died in London on 12 August 1962, at the age of eighty. He was a remarkable figure, alike in the picturesqueness of his antecedents, in his unusual upbringing, in the variety of his scientific interests, in the vicissitudes of his life, in his

---

[4] Degler, Carl 1991 *In Search of Human Nature: The Decline and Revival of Darwinism in American Social Thought*. New York: Oxford University Press, p. 187.

[5] Barkan, E. p. 76.

[6] Barkan, E. p. 169.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

> contributions to science at times of vital change and in the sheer volume of his published work, the product of a long life of intense industry. It was well said of him that in one obituary notice that he was a man who influenced the thinking of his time...
> Gates was not a 'racist' in the sense of believing in superiority and inferiority. He once said, apropos of race: 'To say that all men are equal has not got us very far. It is more accurate to say that all men are different, and then to respect each other's differences.'[7]

The handling of Margaret Mead's discredited *Coming of Age in Samoa* puts to rest any questions about Barkan's ideological leanings. He glosses over Derek Freeman's expose as a "controversy that was part of a sociobiology debate". (Freeman is never mentioned by name nor are there any direct references to his study.) Barkan admits that Mead's most popular work, flawed though it may be, has served a useful purpose by promoting cultural relativism. This confirms what Barkan admits throughout his book, namely that the field of anthropology in this century has been dominated by egalitarian ideologues who were primarily concerned with advancing their own political agenda. That agenda primarily has been to discredit scientific research into race differences. Although equally critical of previous attempts to study race differences, Shipman's account is more balanced and objective than the other two volumes. The title of Shipman's book, *The Evolution of Racism*, conveys a misleading impression of the story she presents to her readers. Her main concern is the "use and abuse of science". In this regard, she rejects the use of scientific findings to bolster preconceived political views, be they on the extreme right or left. Unlike the Barkan or Tucker accounts, a fair amount of space exposes the activities of left wing scientists who suppressed the study of race for egalitarian purposes. Shipman revisits the controversy over the drafting of the UNESCO statement on race by showing how politicized the whole ordeal had become. She also takes Ashley Montagu to task for injecting his own political biases in scientific

---

[7] Fraser Roberts, J. A. 1964 "Reginald Ruggles Gates 1882-1962" *Biographical Memoirs of the Royal Society*. Vol. 10, pp. 82-106.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

disputes. Montagu's resolution denying the biological basis of race was soundly rejected after a number of leading geneticists opposed this part of the early UNESCO draft.[8]

The mistake that egalitarians continue to make, according to Shipman, is in rejecting the concept of race. Although she seems ambivalent about fully accepting this as well, Shipman comes to terms with the fact that race differences are not going to vanish over night. In her view, appreciating a true sense of diversity is a legitimate basis for studying race differences. This diversity fundamentally rests upon ethnically unique cultures.

Shipman helps to restore the work of Carleton Coon and William Sheldon, two scholars whose research has not been fully appreciated. Coon's work finally receives the proper respect that it lacked for so many years. As a towering figure in anthropology, Coon published several major monographs, became a member of the Harvard faculty and was fluent in ten languages. Over the years, he became embroiled in several heated exchanges with Montagu, Washburn and Dobzhansky on the issue of race. Shipman accurately portrays Coon's theory of racial origins as being controversial, but not the "racist" piece of work that Montagu and others had charged. Montagu's hatred of Coon is as obvious eleven years after Coon's death as it was when he clashed with Coon at scientific gatherings. In August 1992, Montagu described Coon's work in a letter to *The New York Times*:

> The findings of the Carleton Coon book [*The Origins of Races*] were neither scientific nor sound, and its conclusions were rejected by physical anthropologists as both genetically ignorant and socially prejudicial.[9]

Sheldon's contributions in constitutional psychology are briefly

---

[8] Further detailed accounts of the UNESCO statement can be found in Kuttner, Robert E. (Ed.) 1967 *Race and Modern Science: A Collection of Essays by Biologists, Anthropologists, Sociologists and Psychologists* New York: Social Science Press. See also "Anatomy of A Controversy" *Mankind Monographs* (Part II), November 1963.

[9] Montagu, Ashley 1992 *The New York Times* Letter to the Editor, August 29, 1992 p. 18.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

mentioned. Sheldon, a pioneer in devising somatotyping techniques, published the results of his work in a series of books that showed how temperament and delinquent behavior correspond to differences in physique. Shipman correctly notes that race had very little to do with Sheldon's work. Oddly enough, she fails to mention the results of *Physique and Delinquent Behavior: A Thirty-Year Follow-up of William H. Sheldon's Varieties of Delinquent Youth* by Hartl, Monnelly and Elderkin. This 1982 report confirmed what Sheldon discovered in his original study: a consistent "association of mesomorphic body build with juvenile delinquency".[10]

On one matter, however, Shipman is unjustifiably insistent, and factually incorrect. She claims that "the abundant evidence of the variance in absolute brain size among races was virtually useless, for there was not (and is not) any demonstrated correlation between brain size and intelligence among humans. In other words, having a larger cranial capacity inside your skull is no indicator of your innate intelligence".[11] This statement fails to address a growing amount of evidence to the contrary. Arthur Jensen has published several recent papers that show a modest but consistent relationship between some physical and mental traits. In "Race and Sex Differences in Head Size and IQ", Jensen and Fred Johnson point to positive correlations between head size and IQ. They also show that when "white and black children who are matched on IQ show, on average, virtually zero difference in head size".[12]

Tucker begins with the study of race in the social sciences prior to the turn of the century. Early on he establishes his central thesis:

---

[10] Hartl, Emil M., Edward P. Monnelly and Roland D. Elderkin 1982 *Physique and Delinquent Behavior: A Thirty Year Follow-Up of William H. Sheldon's Varieties of Delinquent Youth* New York: Academic Press pp. 532-542.

[11] Shipman, Pat 1994 *The Evolution of Racism*. New York: Simon and Schuster, p. 198.

[12] Jensen, Arthur R. and Fred W. Johnson 1994 "Race and Sex Differences in Head Size and IQ" *Intelligence*. Vol. 18, pp. 309-311. See also Jensen, A. R. 1994 "Psychometric g Related To Differences in Head Size" *Personality and Individual Differences* Vol. 17, No. 5 pp. 597-606 and Jensen, A. R. and S. N. Sinha "Physical Correlates of Human Intelligence" in *Biological Approaches to the Study of Human Intelligence*. (Ed.) Philip A. Vernon, New Jersey: Ablex Publishing Corporation. pp. 139-242.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

scientists who have pursued the study of race differences have done so in order to justify their own political ends. Tucker's attempt to portray eminent scholars, like Cattell, Eysenck and Jensen, as pariahs rests on the flimsiest of evidence. His primary quarrel rests with research findings from differential psychology and behavior genetics rather than personalities. Unlike Shipman, who accepts the legitimacy of examining the causes of race differences, Tucker finds this line of scientific work completely useless. After beginning with an overview of eugenics, Tucker shifts to the early period of mental testing and concludes with what he calls 'Jensenism'.

This approach is what passes in journalistic circles as a 'cut and paste' hatchet job. Tucker gives the term 'McCarthyism' new meaning. This blatant political tract links some of the most prominent scholars with the most outrageous assertions of some eugenicists. This guilt by association tactic is used in order to discredit valid and empirically tested scholarship.

Tucker's work is clearly the most dishonest and hostile of the three titles, and it's clear that his knowledge is rather limited on a number of matters. For instance, Tucker's depiction of factor analysis and "heritability" of intelligence as two "psychological antiques [and as] old concepts that have been gathering dust in psychology's basement" reveals his limited understanding of these two concepts. It is certainly true that factor analysis is not new to psychometricians, but the fact that it isn't new does not render it useless or invalid. Bouchard properly refers to this type of criticism as "pseudo-analysis".[13] This accurately depicts Tucker's book from cover to cover. The fact that egalitarians conveniently use race related research to justify redistributionist social policies, whether it consists of income transfers or busing to promote racial "balance", some how escapes Tucker's own portrayal of politically driven science.

All three authors emphasize the obstacles to defining and classifying the racial divisions of humanity. Do these limitations reflect the state of knowledge from an earlier historic period or are

---

[13] Bouchard, Thomas J. 1987 "The Hereditarian Research Program: Triumphs and Tribulations" in *Arthur Jensen: Consensus and Controversy* by Sohan and Celia Modgil, The Falmer Press. pp. 55-70.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

they equally applicable now? Is it scientifically impossible to decipher the meaning of race differences in the absence of "pure" races? Although Shipman accepts the innateness of human differences, in her epilogue she questions the role that race plays in these differences,

> People are different from one another and in this sense human races exist. But human groups evolve, have evolved, will evolve; with each birth and each death the genetic attributes of human populations alter. Drawing a line around an ephemeral entity like a human race is an exercise in futility and idiocy.[14]

The distinguished British scientist John Baker answered this very point in his 1974 landmark study:

> It is sometimes claimed that the existence of intermediates makes races unreal. It scarcely needs to be pointed out, however, that in other matters no one questions the reality of categories between which intermediates exist. There is every gradation, for instance, between green and blue, but no one denies that these words should be used. In the same way the existence of youths and human hermaphrodites does not cause anyone to disallow the use of the words 'boy', 'man', and 'woman'. It is particularly unjustifiable to cite intermediates as contradicting the reality of races, for the existence of intermediates is one of the distinguishing characters of the race: if there are no intermediates, there are no races.[15]

One reviewer of *The Evolution of Racism* made a similar point about Shipman's claim that "over 99 percent of our genes are held in common with the Chimpanzee...[for humans] less than 1 percent of our genes can possibly differ from each other. How can the differences be anything but trivial when viewed in this perspective?" The reviewer noted that:

> This statement is meaningless. Minuscule genetic changes can

[14] Shipman, P. p. 263-271.
[15] Baker, J. R. p. 100.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

> produce very non-trivial effects. A change of just one out of several hundred amino acids in the protein hemoglobin is all it takes to cause sickle cell anemia, a genetic disease most prevalent in blacks. A tiny change in another gene causes Tay-Sachs disease, most common in Ashkenazi Jews.[16]

The hurdles attributed to the scientific clarity of race, the study of ethnic differences and what these differences mean are primarily ideological rather than technical. Although this is the unintended lesson drawn from these titles, it is nonetheless a major part of the story. The detailed studies of Coon, Baker and Rushton indicate that the bio-social aspects of race are far from being completely resolved. Herrnstein and Murray arguably note that the jury is still out. Even so, researchers like those mentioned above have plowed some significant ground. The fact that so much remains unknown should not be an excuse to avoid further research in this area.

Thirty years ago Dwight Ingle, editor of *Perspectives in Biology and Medicine* and a respected physiologist at the University of Chicago, urged scientists to investigate racial differences in intelligence.[17] The American scientific community refused to officially examine this issue then and dismissed this idea again when a controversial Nobel prize winning scientist challenged the National Academy of Sciences to thoroughly investigate the bio-social implications of race differences. By following the objective lead of Baker, Coon, Rushton and others, the American scientific community should finally address this unresolved scientific issue once and for all.

---

[16] Barinaga, Marcia 9/22/94 *The Washington Post* Sec. D, p. 2.

[17] Ingle, Dwight J. 1964 "Racial Differences and the Future" *Science* 10/16/64, Vol. 146, pp. 375-379.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

References

Baker, John
1974 *Race* New York: Oxford University Press pp. 16 & 100.

Barinaga, Marcia
1994 *The Washington Post* Sept. 22. Sec. D, p.2.

Bouchard, Thomas J.
1987 The Hereditarian Research Program: Triumphs and Tribulations, *In Arthur Jensen: Consensus and Controversy* by Sohan and Celia Modgil, Washington DC: The Falmer Press

Coon, Carleton S.
1962 *The Origins of Races* New York: Knopf.

Degler, Carl N.
1991 *In Search of Human Nature: The Decline and Revival of Darwinism in American Social Thought* New York: Oxford University Press, p. 187.

Herrnstein, Richard J. and Charles Murray
1994 *The Bell Curve: Intelligence and Class Structure in American Life* New York: The Free Press.

Jensen, Arthur R.
1994 "Psychometric *g* Related To Differences in Head Size" *Personality and Individual Differences* Vol. 17, No. 5 pp. 597-606.

Jensen, Arthur R. & Fred W. Johnson
1994 "Race and Sex Differences in Head Size and IQ" *Intelligence* Vol. 18, pp. 309-333.

Jensen, Arthur R. and S. N. Sinha
1993 "Physical Correlates of Human Intelligence" in Philip A. Vernon (Ed.) *Biological Approaches to the Study of Human Intelligence* New Jersey: Ablex pp. 139-242.

Lane, Charles
1994 "The Tainted Sources of 'The Bell Curve'" Dec. 1., *New York Review of Books* pp. 14-19.

Rushton, J. Philippe
1994 *Race, Evolution and Behavior: a life history perspective* New Jersey: Transaction Publishers.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

BOOK REVIEW ARTICLE

Surveying Multi-Ethnicity

Daniel R. Vining
University of Pennsylvania

The First Universal Nation: Leading Indicators and Ideas About the Surge of America in the 1990's
Ben J. Wattenburg
New York: The Free Press, 1991

This is a book with a good title. Unfortunately, most of what is inside the covers is a collection of reprinted columns from newspapers and periodicals. So reading it is like reading old newspapers. We cannot say, with Ezra Pound, that literature is news that stays news. The book comprises a collection of reprinted news columns, and not very interesting ones either, about Johnson (the late U.S. president), baseball, Charles Murray's book about welfare in the U.S., a former governor of Colorado (Lamn) and his ideas, the population meeting in Mexico City in 1984 and a defense of the American position (which Wattenberg says was misrepresented), Reagan, Bush, Scoop Jackson (the late American Congressman, who had a great influence on Wattenberg), Weinberger (former Secretary of Defense), Jeanne Kirkpatrick (former American ambassador to the U.N.), etc.

In other words, the book is a very much mixed bag of columns, some dating all the way back to 1982. It isn't a book built from scratch, like his *The Birth Dearth*, which acquainted the general public with the below-replacement fertility of the developed world and argued that fertility was too low in many countries. This book *has* a theme, but it is hard to ferret out, the book not being built from scratch but consisting mainly of reprinted columns.

Let me try to tell you what that theme is. The first "universal nation" means that the U.S. is rapidly becoming a country with all the diverse races and ethnic groups of the world in it. Wattenberg is optimistic about this development, but doesn't tell the reader why he is so optimistic, or why the U.S. should be any different from the

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

other countries of the world where there are always tensions between different races and ethnic groups living within the same borders. As a matter of fact, Korea is the only country in the world that does not have any minorities (i.e., non-Koreans) in it, and where, as a consequence, there are no racial or ethnic tensions that exist in every other country in which a mixture of races and ethnic groups is to be found. For example, there are many ethnic tensions in Eastern Europe and the former Soviet Union, which had around 200 ethnic groups, too numerous to name here, that contributed to the ultimate breakup of the Soviet empire. There are also ethnic, religious, and racial tensions on the Indian sub-continent that threaten to tear that region apart. There are similar conflicts on every other continent of the world that promise to break-up many of the present political states that are too diverse in population to be rightly called nations.

The racial and the ethnic (not to speak of the religious) variable assumes great importance in countries where a single group is not overwhelmingly dominant, and there are usually tendencies toward ethnically-based political sub-divisions. Even in countries where the different sub-groups are mixed up regionally there is endless quarreling and disputing. People identify with their race, ethnic group or religion to such an extent that the integrity of the state itself is threatened. We see this over and over again. There are only about 150 states and there are many more ethnic groups than that. In no country that I know of (besides the U.S.) are all the major races and ethnic groups well represented and there is often trouble even where there are just two races or ethnic groups.

What makes the U.S. curiously immune from these tendencies, as Wattenberg imagines it is? According to Wattenberg, the U.S. is made up of immigrants and the descendants of immigrants (the indigenous peoples, namely, the American Indian and the Eskimo, are ignored by Wattenberg and are, in any event, small in number, though there is still the question of whether they have any special rights over the more recent immigrants and their descendants just because they were here first). Because it is made up of immigrants and their descendants, he argues, it is therefore uniquely able to prosper, despite the undoubted tendency of the ethnic and racial variable to play havoc with a state's prosperity. Wattenberg pretty

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

much leaves it at that, except to contrast the U.S. with its main competitors, Europe and Japan, which have birth rates well below replacement, are more resistant to immigration and are therefore unlikely to grow demographically like the U.S., which has birth rates rising towards replacement and is clearly not so resistant to immigration. The author makes no sustained argument that the U.S. will avoid the problems associated with race and ethnic group. He simply assumes that the ability of the U.S. to avoid racial and ethnic tension is apparent from the U.S.'s continued receptivity to immigration. Why the U.S., or the U.S. legislature, is so receptive, is another question altogether. I suspect that the answer lies elsewhere than immigration, since all the countries in the world were settled by immigrants, albeit some a long time ago; mankind's history is one of migration — and associated conflict.

Thus, Wattenberg presents few explanations of why the U.S. should be expected to be capable of avoiding the discord, generally fatal, that would accompany a mass of different races and ethnic groups living together. His only answer seems to assume a massive "melting pot" involving cross-breeding between the diverse immigrants in America. He cites the U.S. Census Bureau (1988) as providing the following statistics concerning the rate of U.S. cross-breeding:

EXOGAMY RATES
(the Percentage of People from a Specified Group Marrying Outside that Group)

Group	Male	Female
White	1.1%	0.9%
Black	4.6%	2.1%
Other*	17.6%	26.2%
Hispanic	15.5%	19.1%

* Other — primarily Asian Americans

By Religion		
Jewish	37%	25%
Protestant		18% (total)
Catholic		40% (total)

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

Rate by Age	Under 25	65+
English	44%	38%
Irish	64%	45%
Italian	77%	34%
Polish	82%	43%
Swedish	90%	78%

Wattenberg nevertheless concedes that white Americans have preferences, or prejudices, concerning which ethnic group provides the most suitable immigrants. He cites a Roper survey as follows:

Q: Has the arrival of the following religious, racial, or ethnic groups been a good or bad thing for the United States?

Group	Good Thing	Bad Thing
English	66%	6%
Irish	62%	7%
Jews	59%	9%
Germans	57%	11%
Italians	56%	10%
Poles	53%	12%
Japanese	47%	18%
Blacks	46%	16%
Chinese	44%	19%
Mexicans	25%	34%
Koreans	24%	30%
Vietnamese	20%	38%
Puerto Ricans	17%	30%
Haitians	10%	39%
Cubans	9%	59%

Wattenberg does have a section on the impact of rising population on the environment. Notably, however, he shrugs off the threatened ecological impact of the Third World population explosion:

The "population explosion" has been the catastrophic hand-

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

> maiden of environmentalists. Sooo many people, causing sooo much despoliation, and sooo much poverty. Arguable. A revisionist school of thought, call it "supply side demographics," makes the point that people produce as well as consume, that culture causes poverty and wealth, that population growth is, in itself, neutral.

Again he writes:

> Does rapid population growth harm Third World nations? The old answer was "Yes, it's a disaster." The new answer is, "Uh. Well, maybe a little bit."

Wattenberg recognizes and virtually welcomes the current decline of the European population:

> The nations of Western Europe have the lowest fertility rates of any region of the world. They have had the world's lowest rates for about 15 years. Those rates are well below the rate required to merely reproduce a society over time.
>
> Meanwhile, most of the rest of the world will be growing. In 1988 there were 231 million people in the European "big four": West Germany, Italy, the United Kingdom and France. These nations today are the 14th, 15th, 16th and 17th largest countries in the world (according to PRB). By 2020 those four nations will have about 210 million to 215 million people, and they will rank 24th, 25th, 28th and 29th. The total population of the big four at the time will be just about that of one Asian nation — Bangladesh!
>
> So what? European markets will be less important relative to the rest of the world. The geo-political battle power and potency for European countries and for European culture will be diminished.

Coming back to the problem of the impact of over-population on the environment, Wattenberg claims that various environmental variables, like certain kinds of emissions, have shown an encouraging trend, at least in the U.S., where they are measured. But when he addresses the really important environmental problems, like global warming, the decline in biodiversity, and the depletion of the ozone layer, the author unfortunately does not have much to say. Physical scientists have shown pretty conclusively that ozone depletion is

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

taking place and that human activity is largely responsible, CFC's being a major culprit, which are essential to air-conditioning and refrigeration and seem to be essential to the cleaning of computer components and to fire extinguishers that are so much taken for granted in the developed world. What happens when India and China and other industrializing nations will have air-conditioning, refrigeration, computers, and fire extinguishers as the developed world does now? Demographers and economists both assume that the developing world will become like today's developed world now. They stand pretty mute before the implications of this and so does the author. To turn to global warming, the data are less firm here, though the physical scientists have shown that the level of carbon dioxide, methane, and CFCs, the so-called greenhouse gases, are rising, and there is no reason to think that the developing world will not generate them as the developed world does now.

We have also been warned that biodiversity is declining, principally because tropical rain forests in such countries as Zaire, Brazil, and Indonesia are being destroyed. Biodiversity is important because the genetic makeup of the plants and animals living in the tropical rain forests that are being destroyed is unique. The tropical rain forests contain a lot more of the species than do the forests of the temperate zone. Now, either the author is denying that such destruction is taking place or he's not. He doesn't mention this problem in his book. I gathered from this that he deems it unimportant and believes that either the tropical rain forests are not being destroyed due to over-population and over-consumption, or even if they are, it's not something we need to be worried about.

As a matter of fact, not many important subjects, including migration (which constitutes primarily a cultural and political problem, rather than an economic one, as his book implies), are truly confronted in this book. This is primarily because demographers and economists are not confronting them, and Wattenberg looks to the academic literature for much of his inspiration. As a consequence, as a popular piece on demography, we can ignore this book and wait for something else to come along, which will hopefully draw upon a scholarly literature more attuned to the world's ecological and demographic problems.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Anthropomorphic Stelae of the Ukraine: The Early Iconography of the Indo-Europeans

D. Ya. Telegin
Ukrainian Academy of Sciences, Kiev

and

J. P. Mallory
Queen's University, Belfast

CONTENTS

The Copper Age Stelae of the Ukraine

Imagery and Myth

Stela-Obelisks of the Cimmerian Period

Stelae of the Scythians and Sarmatians

Stelae of the Early Slavs

Stone 'Babas' of the Polovtsians

Conclusions

Appendix: A Catalogue of Copper Age Stelae

Journal of Indo-European Studies
Monograph Number Eleven
ISBN: 0-941694-45-3
129 Pages, Illustrated, Hardback $55.00
50 % discount for private JIES subscribers
Add $1.50 (U.S.A.) or $2.50 (foreign) Post and Handling
MasterCard/Visa Accepted

Institute for the Study of Man
1133 13th St. NW, #C-2,
Washington DC 20005, U.S.A.
Tel: (202) 371-2700 Fax: (202) 371-1523

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

The Great Sex Divide

Glenn Wilson

Institute of Psychiatry, University of London

Contents

Sex and Evolution
Evidence from Human Biology
Evidence from Animal and Other Cultures
Can the Differences be Suppressed?
Sexual Anomalies and Difficulties
Talent and Achievement
Aggression and Crime
Social Forces and the Sex War

The author, an eminent psychologist, examines the accumulated evidence for innate psychological differences between men and women and reveals the false assumptions on which much feminist literature is based.

ISBN 1-878465-04-X
Paperback, 160 pages
Bibliographical References and Index
Price: $20.00
VISA AND MASTERCARD ACCEPTED

Scott-Townsend Publishers
P.O. Box 34070
N.W. Washington, D.C. 20043
Tel: (202) 371-2700 Fax: (202) 371-1523

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED